



DOCTOR OF HEALTH (DHEALTH)

Consumer purchasing of medicines in Malta: An insight to how the Maltese population access medicines

Bowman, Corinne

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**Consumer purchasing of medicines in Malta:
An insight to how the Maltese population access medicines**

Corinne Bowman

A thesis submitted for the degree of Professional Doctorate in Health

University of Bath

Department of Health

August 2018

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Abstract

Background: Malta has an average of 3-4 private pharmacies per locality, providing ready access to medicines, however, online purchasing of medicines also occurs. The aim of this study was to highlight trends in purchasing of medicines amongst the Maltese population.

Methods: A mixed methods approach was used. A cross-sectional survey was conducted on a random sample of 1996 residents selected from the Maltese electoral register. An English/Maltese questionnaire was designed to gather data about sources of purchasing prescription-only-medicines (POM) and over-the-counter (OTC) medicines separately. This was followed by five semi-structured interviews with participants from the survey.

Results: The response rate was 22% (N=444, 264 women) and respondents had a mean age of 52 years (SD+/-17). Only two participants reported ever purchasing POMs online, while 4.3% purchased OTCs including vitamins, supplements and herbal combinations. This finding was supported by the interviews, in which all participants expressed disregard towards internet purchasing of medicines. The main reason for online purchasing, expressed in both the survey and interviews, was lack of local availability and higher price. Whereas 89% of respondents provided a reason for not purchasing online, with 45% of these citing safety as their primary reason. Age significantly affected whether participants ever thought of purchasing medicines online, ($\chi^2 (4) = 20.208, p < .001$) with those aged 18-34years (42%) and 45-54years (37%) most likely to report so. Educational level was significantly associated with a belief that it was not safe to buy online ($\chi^2 (2) = 13.952, p .001$) with the most educated being more likely to report this.

Conclusions: The majority of Maltese people purchase their medicines from their local pharmacy and do not purchase their medicines online, citing the risks that may be associated with internet purchasing of prescription medicines. There is a belief that it is not safe to purchase medicines from online sources.

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List of Abbreviations

BMQ	Beliefs about medicines questionnaire
COPD	Chronic Obstructive Pulmonary Disease
ED	Emergency Department
EU	European Union
GP	General Practitioner
NHS	National Health Service
OR	Odds Ratio
OTC	Over-the-counter
PIL	Patient information leaflet
POM	Prescription only medicine
POYC	Pharmacy of your choice
SPC	Summary of product characteristics
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

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Chapter 1 Background

The Maltese healthcare system is funded through taxation and national insurance and also supplies free medicines to patients who satisfy the criteria set within an entitlement scheme. Medicines are also available for purchase from private community pharmacies that are located in various areas around Malta within close proximity to the population. So far Maltese law does not allow for Internet pharmacies to operate in Malta and therefore medicines purchased through the local supply chain are always obtained from 'brick-and mortar' pharmacies. Due to Malta's small market, medicines can be very expensive especially in the case of patented medicines and this could be a costly burden on the patient. There are also situations where medicines and products such as vitamins or supplements may not be available locally and considerable literature about how and why people in foreign countries use the Internet to access their medicines, is discussed further in Chapter 2.

Previous research by Wirth et al has shown that over half (52%) of Malta's residents visit their pharmacy once a month or more often for prescription only or over the counter medicines.¹ To date however, there is a lack of reliable information about whether Maltese residents purchase any medicines outside the local market. As presently reported on the Malta Medicines Authority website, a survey revealed that more than 1 in 7 (15%) of correspondents reported purchasing medicines over the internet, including prescription only medicines without a prescription. The Internet has become a revolutionary technology that allows opportunities to purchase anything over the Internet including medicines. A major concern of this source is that a Maltese resident will be acquiring the medicine according to registration in that particular foreign country and this could pose problems for the patient's health.

This chapter provides an overview of Malta's demographics and an account of the healthcare system in general. It aims to highlight the population's characteristics and uniqueness of the country and how being an island can present situations that other larger countries might not be experiencing with regards to supply and purchasing of medicines.

1.1 Malta's demographics

The Republic of Malta consists of five islands namely Malta, Gozo, Comino, Cominotto and Filfla of which only Malta and Gozo are inhabited with Malta being the largest. The population was 440,433 as at 1st January 2017.²

Over the past 10 years there has been a steady increase in the population from 407,832 in January 2008.² The total land area is 316km² and therefore at present, the population density is of 1393/km².² According to this data Malta is the most densely populated member state in the EU.³

As per the National Statistics Office in Malta in 2014 (data published July 2016),⁴

- the total population at the end of December was 429,344 (214,735 males and 214,609 females) with 401,868 of those being Maltese nationals.
- for the first time in the past century, the total number of males in Malta exceeded that of females.
- diseases of the circulatory system were the principle cause of death in Malta (37.6% of total deaths) followed by tumours (28.5% of total deaths).
- the life expectancy at birth was 82.1 years (84.3 for females {compared to 83.3 years for the EU}⁵) and 79.8 for males {compared to 78.1 for the EU}⁵).

The old age dependency ratio has risen drastically from 19.3% in 2005 to 27.6% in 2015 and is expected to keep on increasing steadily.⁵ The ageing population is a major concern for the Maltese population because of all the challenges it brings to keep the population as autonomous as possible for the benefit of health ageing.

The culture in Malta has changed significantly over the past 15 years, from a mono-ethnic population to a more diverse, multi-ethnic society that is more socially liberal.⁵

1.2 Influence of education on health behaviour

The educational level in Malta has been studied in relation to certain behaviours as explained here below by Gauci. It was observed that education plays a very important part on the Maltese lifestyle and habits. This factor may be influential on health practices too including activities such as purchasing of medicines. One needs to observe different levels of education in this respect.

Gauci claims that lower socioeconomic individuals tend to have poorer health behaviours.⁵ This is not a recently discovered phenomenon but dates back to the 19th century and has been described in an overview of European countries by Mackenbach et al. The authors state that analysis of data obtained from European Community Household Panel (ECHP) for 11 countries, show that prevalence rates of low general health are higher among lower educational level or occupational class. Yet this phenomenon is complex and has been studied extensively by many researchers who looked at different aspects of the topic. Mackenbach et al. further highlight that the persistence of large health inequalities are due to ingrained social stratification systems within the country's society and therefore one cannot expect there to be a decrease in health inequalities within short time periods.⁶

In the case of Malta, about 25% of people who did not complete secondary school were found to be daily smokers, compared to 18% of persons with a degree. The research also shows that self-reported prevalence of hypertension in persons having completed education up to secondary school or lower levels, was 29% compared to 25% in those with a degree.⁵ In the case of diabetes, Gauci reported a 12% self-reported prevalence among the less educated compared to a 6% of those with a degree.

1.3 The Healthcare system in Malta

The public healthcare system is the main provider of health services in Malta and is funded through taxation and national insurance. The state fund covers most medical services, hospitalisation and prescriptions for medicines on the government formulary.⁷ Over the past years, private healthcare insurance has increased among the population and some choose to pay out of pocket for private family doctor and consultants' services.⁵

Patients frequently face situations when they have to resort to private out-of-pocket payments for private primary care, ambulatory specialist care, and elective surgery as well as for medicines. In 2012, the private expenditure on pharmaceutical products was €102.2 million, an increase from €99.2 million in 2011.⁸ Patients who revert to out-of-pocket payments could be doing so because they can afford it and because it is more convenient to them. Others may feel that they have no other option to obtain immediate care and treatment irrespective of their financial constraints.

Among these challenges the government faces to maintain coverage for the Maltese population, there is also a continuous difficulty in funding innovative new medicines.⁵ Certain health sectors could suffer because coverage for some patients may be at risk. To take an example, oncology medicines have been absent from the NHS formulary for too long, the reason being that funds allocated to such medicines would need to be substantially increased. Only recently (2017) have some oncology medicines been added to the formulary.⁹ People who could not afford these expensive medicines used to either purchase them directly from the suppliers at their own expense or revert to charitable institutions for support of some kind such as the Malta Community Chest Fund Foundation.¹⁰

1.4 Equity of health outcomes

The main objectives of Malta's National Health System Strategy (NHSS) adopted in the 2014-2020 document⁸ were aimed at equity in health outcomes. These included: responding to increasing demand due to demographic changes and epidemiological trends; increasing equitable access, including that of medicines; improving quality of care; and ensuring sustainability overall.⁸ It was in 2015 that Malta conducted its first national Health Systems Performance Assessment, with support from the WHO. It had reported that there was a general good access to services however that equity of health outcomes was an issue that was highlighted as meriting further attention.⁵

1.5 Entitlement of medicines

There are two schemes that entitle Maltese residents to free medicines through the public healthcare system, both as an inpatient and an outpatient. These are covered by Maltese social security legislation:

1. Schedule II: Means-tested scheme

Schedule II scheme entitles people to free medicines depending on the outcome of a means test. This test falls under the non-contributory scheme of the Social Security Act accordingly. People falling within the low-income bracket, are entitled to free medicines from a restricted list of essential medicines and to certain medical devices.^{5,11}

2. Schedule V: Disease specific scheme

Other people who do not fall in this low-income bracket may still be eligible to free medicines through the Social Security Act's Schedule V. This scheme consists of a list of chronic illnesses or conditions that entitles people to free medicines strictly related to that illness or condition. This schedule works differently from the Schedule II in that it is not dependent on financial means.

The list of chronic illnesses and conditions has recently increased so that at present there are 85 conditions that entitled patients to free medicines.⁵ These

free medicines include around 1300 different products⁵ that form the Government Formulary Outpatient List and is managed through the Directorate of Pharmaceutical Affairs under the Health Department.

1.6 Access to free medicines

Patients collect the free medication that they are entitled to through the government healthcare system from a local private pharmacy of their choice, a scheme called “The Pharmacy of Your Choice scheme” (POYC). This dispensing and collection system has been introduced in 2009 and includes several localities in Malta. The patient chooses his appropriate pharmacy and applies through the pharmacist to join the POYC scheme. The government subsidises the service by giving the local pharmacy owner a fee per patient that they accept to enrol in the scheme. The POYC is managed through a delegated office that runs the IT systems through all the pharmacies that function in the scheme. This office has created a National Outpatients Repository, that holds data about over 140,000 outpatients’ entitlement schedules, distributed among 219 licensed community pharmacies.^{12,5}

Patients requiring treatment not available on the government formulary have to go through a process to obtain approval on an exceptional basis.

To avoid any problems with supply of these state funded-medicines, the government health procurement department also known as Central Procurement and Supplies Unit (CPSU) has stock control and management systems in place. The department monitors stock levels continuously according to the customers’ demands so as to avoid problems in interruptions of medicinal supply.

The European Commission’s health technology assessment network has been working to bring cooperation between the stakeholders for the facilitation of efficient access of safe, innovative technologies.¹³ Yet, access to expensive innovative medicines is still a challenge on financial burdens which is being addressed through the “introduction of disease management strategies

combined with innovative procurement strategies including managed entry agreements and pay-for-performance models.”⁵

1.7 Regulation of pharmaceuticals

The Medicines Authority is the body that regulates the process of putting medicinal products on the local market and any related pharmaceutical activities. Marketing authorisations are approved by the Malta Medicines Authority in accordance with the Medicines Act, 2003 and the Medicines (Marketing Authorisations) Regulations. Such authorisations are granted by the European Commission.¹⁴

Medicines in Malta are categorised as prescription-only medicines (POM) or over-the-counter products (OTC). Both POM and OTCs are regularly bought from local pharmacies under the supervision of the pharmacist. The Medicines Authority website maintains a database of what is POM and what is OTC. The pharmacist still has control over dispensing either of these and therefore follows up the patient for adverse events and interactions.

Products placed on the Maltese market are authorised in line with procedures as specified in European legislation and monitored for quality and safety through the Malta’s Medicines Authority. Authorised wholesale dealers are obliged to follow standards of EU Good Distribution Practice and they are the only source of medicinal products imported into Malta. A ‘responsible person’ (RP) is responsible for maintaining quality during the whole process of distribution and to manage any technicalities related to wholesale dealer activity and is usually a registered pharmacist.^{15, 5}

Medicines can be purchased in retail ‘brick and mortar’ pharmacies all around Malta and Gozo and from private hospital pharmacies. The costs are paid fully and directly by the patient. Patients who would have been an inpatient are given a three-day discharge treatment free of charge. If the patient needs chronic treatment on an outpatient basis, a prescription is given to the patient to

purchase from a private pharmacy unless the patient is entitled to long-term free medicines through Schedule II or Schedule V.

Malta has a number of local manufacturers for the production of pharmaceutical products including mainly generic medicines and medicinal gases. In August 2016 there were 18 licensed manufacturers of pharmaceutical products.⁵ However Malta relies on importation for the majority of medicines.

1.8 Active ingredient versus brand name prescribing

Doctors working in the public sector prescribe by the generic name in accordance with a 'generic prescribing policy.'¹⁶ The procurement as mentioned before through CPSU is also based on the generic name which is the name for the requested medicine submitted for tendering purposes.

In 2006, talks were being held between the medicinal economic operators and the government to enhance access to more medicines at more competitive prices through the generics' market. The Chamber of Small and Medium Enterprise (GRTU) insisted that patients should have the choice of different brands and not be forced to get a particular brand and to amend the law to enforce doctors to prescribe by international non-proprietary name (INN). However the proposal to amend the Medicines Act so that doctors would no longer prescribe branded medicines was turned down due to the authority's belief that the prescriber's professional judgement should not be overruled by legislation.¹⁷

According to the Medicines Act 2003 Article 80, a pharmacist in a private pharmacy can dispense a branded version of the medicinal product as prescribed or an equivalent medicinal product that has the same active ingredient. The prescriber can however specifically request a particular branded product by writing "branded" or "®" after the product name on the prescription.¹⁸ One of the reforms to improve health system sustainability is in fact to ensure cost-effective use of medicines and therefore promoting increased use of less

expensive generic equivalents. This has been documented in Malta's National Health System Strategy for 2014-2020 (NHSS).⁸

1.9 Regulation of pharmacies

Up to August 2016, there were 226 licensed private pharmacies and hospital pharmacies. Regulation allows for the number of licensed pharmacies within any town or village not to be less than two however must not exceed the pharmacy to population ratio of 1:2500. Pharmacies should not be less than 300 metres away from each other.⁵ Pharmacies can only purchase medicines from authorised wholesale dealers.

As already mentioned, current Maltese legislation does not allow for Internet pharmacies. The Malta Medicines Authority has instructed that if one purchases medicines from an internet pharmacy established in the EU, it is obliged to supply the customers with the medicine as authorised in Malta. Therefore if in Malta the medicine being purchased is a POM, then the foreign EU internet pharmacy should dispense that medicine against a prescription according to the Maltese classification.¹⁹

1.10 Medicines in Malta

Access to medicines is a major concern for various stakeholders in Malta and these include patients as well as the department concerned with procuring medicines for the government formulary. Issues of patients' affordability have been the aim of a Working Committee on the Pricing of Medicinal Products under the Maltese Consumer and Competition Division, aimed at reducing prices. However *"the mechanism for price reductions in the private sector remains voluntary and without any legal basis."*²⁰

As on the 31st December 2013, the total number of authorised medicinal products in Malta, excluding those authorised through centralised procedure, was over four thousand five hundred. This number increased slowly but steadily

as from 2009. In 2014 there was a marked increase in the number of procedures for the registration of medicinal products according to the latest Malta Medicines Authority 2016 report.²¹

A Medicines Intelligence and Access Unit has been set up in 2014 as a section within the Malta Medicines Authority with the intention to collaborate with different entities including government authorities and the industry to facilitate procurement and supply of medicines. Availability of medicines is “too little, too late”²² especially for small states such as Malta.²² It is important that access to medicines is satisfactory because lack of medicines in the local setting could be jeopardising the treatment options for patients.

Restricted access to medicines in Malta has several causes, the medicine may not have been locally authorized (cost issues for a small market like Malta), locally authorised products are not marketed because of too few patients and locally authorised and marketed products can still be unavailable because of shortages or supply chain issues²² eg. liothyronine used for hypothyroidism.

There are several patients who are not entitled to free medication through the public healthcare system and therefore they are left to seek supplies either through charitable institutions or by their own means. Patients who purchase their treatment might not be doing so locally because it is not available, or they need novel or expensive medicines. Through social media, people have expressed their cost savings through internet purchasing: “*I use the Internet to procure medicines from abroad therefore saving much money.*”²³ Patented medicines are particularly expensive and due to the small market size in Malta, it is a costly burden and therefore patients might be reverting to alternatives such as online pharmacies. Items procured in this way may include life-saving medicines, vitamins and herbal products. The community pharmacist in Malta is the core health professional within the community that monitors the patients with their treatment. It is important to see how such practices would shift this balance since supply of medicines through the Internet could mean that the pharmacist’s prescription review would be bypassed.

The lack of intervention on behalf of the pharmacist can be an issue both for the patient who could miss out on important advice required for an optimal treatment outcome and also for longstanding pharmacy owners who could loose out on their business. A similar situation is being seen in the UK because of the NHS-backed prescription app, Echo. This application enables patients to order repeat prescriptions from their GP and also delivers the medicines via Royal Mail from one of the partner pharmacies to the patients' address. Although the idea of such an app is to remove barriers to medicine adherence, many pharmacy businesses are concerned about the reduction of consumer visits to their pharmacy.²⁴

The next chapter summarises the literature regarding medicines and online purchasing around the world, and then goes on to identify the purpose of the research within context.

Chapter 2 Literature review

Chapter 1 described the health system in Malta, the challenges faced and the traditional “brick and mortar” pharmacies. This chapter gives an account of the existing literature related to purchasing of medicines, in “brick and mortar” and online pharmacies. The search strategy is described and the structure of this chapter follows the themes that emerged from the literature.

2.1 Literature review search strategy

Literature databases were searched for literature related to internet purchasing of medicines going back to as far as the year 2000. The databases searched included Pubmed, Web of Science, Embase, University of Bath Library online search engine.

The search terms consisted of ‘internet’ AND ‘purchasing ’OR ‘buying’ AND ‘medicine’. The terms were separately searched to include the broader meaning of the term and then combined. ‘Purchas*’ and ‘medicin*’ truncations were used where applicable.

Current journals were hand searched to identify ongoing purchasing practices related to local medicines purchasing behaviours in Malta and other countries.

The themes that emerged from the literature include:

Types of pharmacy systems/ pharmaceutical care (section 2.2)

Internet and purchasing of medicines (section 2.3)

Consumer’s choices and preferences in choosing a pharmacy (section 2.4)

Characteristics of consumers that purchase medicines online (section 2.5)

Prescription-only-Medicines and internet (section 2.6)

Regulation and the internet (section 2.7)

Advantages versus risks of internet purchasing of medicines (section 2.8)

Counterfeit medicines (section 2.9)
Parallel importation (section 2.10)
Local supply chain issues (section 2.11)

2.2 Importance of Medicines availability for pharmaceutical care

Pharmacists, across Europe, work in different community pharmacy setups. These can be from large pharmacies that focus mainly on medicines and serve over 10,000 people (Scandinavian type) to smaller services that serve about 3,500 people and sell many non-medical items besides medicines (Anglo-Saxon type).²⁵ Furthermore, different European countries have different strategies of pharmaceutical care implementation. Denmark, for example, has implemented a care strategy where medicine-related problems are detected systematically while Netherlands have contracts in place between the pharmacies and health insurance companies to provide this specialised service. Others have incorporated the pharmaceutical care concept within legislation and therefore such care is obliged to be provided by community pharmacists.²⁵ Yet such strategies may be difficult in some countries like Malta where there is generally only one pharmacist in the pharmacy.

Availability and access to medicines is key to the delivery of pharmaceutical care. The goal of pharmaceutical care across cultures and countries is to attain optimised treatment outcomes for patients with the aim of improving their quality of life. The pharmacist is acknowledged as the most accessible health professional and expert in medicines in this respect.

Literature on the topic of pharmaceutical care highlights a further challenge to the provision of such specialised care. From the marketing point of view, pharmacies internationally had to focus on reducing prices to remain competitive because of commercial issues that arose around 2000. Which was mainly due to the deregulation of the healthcare system including the pharmacy system because costs of health care were growing uncontrollably.²⁵ Therefore

cost is a major factor influencing the availability of medicines for patients who may be looking both within the local market as well as foreign sources for competitive prices.

2.3 Use of pharmacies in Malta

The study conducted by Wirth et al. cited in chapter 1, showed that whilst 48% of a sample of 500 Maltese participants visited a community pharmacy monthly or less frequently, 32% visited two to three times a month, 14% visited on a weekly basis and 6% visited more regularly. Eighty-nine percent said that they frequently or always visit the same community pharmacy as opposed to 11% that rarely use the same pharmacy.¹ Ninety percent of respondents said the reason for their visits to the pharmacy was to purchase a prescription medicine and many (65%), also visited the pharmacy to purchase non-prescription medicines.¹ According to findings from the European health interview survey, 40-50% of respondents from Malta had used a prescribed medicine during the two weeks prior to completing the survey. Similar prescription medicine useage rates were found amongst respondents from the Netherlands and Denmark.²⁶ In the case of non-prescription medicines, 30-40% of respondents had reported using a non-prescribed medicine in the two weeks prior to completing the survey, similar to respondents from Luxembourg and Ireland.²⁶

When discussing purchasing of products, one cannot exclude discussing the Internet even in the pharmaceutical market. The Internet has influenced consumer behaviour and there is now a large volume of literature available about internet purchasing of medicines. This is discussed in the next section.

2.4 Internet and medicines

The phenomenon of online purchasing has spread throughout the world irrespective of concerns that arise about the '*nature of the Web and its global dimension*.'²³ Studies have been conducted in several countries and in different

settings with the aim of identifying the different practices of internet purchasing of medicines worldwide.

The first online pharmacies began to operate in the late 1990s. These have increased drastically on an international basis. People get access to pharmaceuticals through legally operating internet pharmacies and their services complement those provided by traditional healthcare systems especially for individuals who live in remote areas. Internet pharmacies have also been referred to as 'clicks-and-mortar'²⁷ where the setup allows patients to purchase products either in person or order products online from their same traditional pharmacy. In this way the online service is acting as an extension of the physical pharmacy store. Such a setup can allow the pharmacist to diversify between acute situations which need to be attended to immediately as opposed to medication on a chronic basis that may be delivered directly from a delegated facility that takes care of repeat prescriptions.²⁷ Such a setup translates into better management and allows more time for communication with the patient therefore. Hence patient safety is increased and the care becomes more focused on the patient.²⁷

Consumers have become accustomed to recognise the Internet as a legitimate vehicle to access medicines. Major companies that support and finance internet pharmaceutical outlets have given the impression to many that internet sources are legitimate.²⁸ Furthermore the Internet is an open gateway to pharmaceutical business and its unregulated and borderless nature paves the way for its misuse by many ill-intentioned individuals who profit from the vulnerability resulting from people's health concerns.

The fast advances in digital technologies is continuously changing how healthcare is delivered and is also attracting online commerce companies like Amazon. The company is believed to be looking at how it can venture the pharmacy market in the US with UK concerned of being the next target. Though only rumours so far, issues of good distribution practice and high regulation are being voiced by pharmacy provider executives who are considering this as a threat.²⁹ On the other hand a US public survey showed that five in ten adults would use or would probably use an Amazon pharmacy.^{29,30} This is being seen

in the light of patients who are switching over to mail-order services for their prescription medicines. Germany too has similar services and more than 60% of internet users buy medicines online.^{29,31}

2.5 Consumers' choices when purchasing medicines

Consumer's choices and behaviour that influence medicines' purchasing patterns are important to understand for the benefit of ameliorating community pharmacy services to match patients' needs and preferences. Studies in consumer preference on pharmacy choice and factors influencing purchases, have been conducted. One such study showed, in the case of OTCs, cultural, social, personal and psychological factors influence the consumer's purchasing behavior.³²

A consumer's behaviour when purchasing a product involves a process that aims to achieve the product that best satisfies his or her needs. Generally the consumer evaluates different alternatives available that can be very limited or extensive. Personal beliefs have a large effect on this process, for example, familiarity with the product and high cost are believed to imply a good quality product. Furthermore purchasing behavior can stem from the personal connection the customer makes over time, resulting in total loyalty to a particular brand. These include those people who simply stick to that brand, no matter what and are less likely to switch brands. On the other hand there are those that do not take an active part in the decision and just buy what is given to them without questions asked and these would be more prone to switch brands of products.³²

Kevrekidis et al. showed that among a convenience sample of 300 Greek participants, over 70% make their purchases always or most of the time from a single pharmacy showing customer's loyalty to a particular healthcare provider.³³ The study also revealed that location and opening hours were highly rated factors that influence customer selection of pharmacy. Pharmacy location has been a factor repeatedly reported by other literature.³³ Furthermore this is

noteworthy for a country like Malta where pharmacies are situated close to each other. A study conducted several years ago, in Malta on 912 members of the public had already established that the majority (over 62%) of the public usually bought their medicines from the same pharmacy and this loyalty increased with age.³⁴ The majority of respondents (70%) visited a pharmacy at least once a month, 31% to purchase prescription medicines and 23% over-the-counter products.³⁴

A study comparing similar influencing factors towards loyalty as described above, was conducted in Poland and UK. In Poland, location (84%), high-quality professional service (82%) and good prices (78%), featured as the major factors when choosing their pharmacy. In the UK the most common factors reported were a high quality professional service (90%), location (89%) and option to discuss health issues in private consultation rooms (80%). Thirty-eight (38%) percent of Polish participants declared visiting the same pharmacy versus 61% in the UK.³⁵

The Internet has also become among common choices customers consider when they need to purchase medicines and therefore is being discussed in the next section.

2.6 Characteristics of consumers purchasing medicines from the Internet

Numerous studies, from many countries, have attempted to estimate the proportion of populations purchasing medicines online. These studies also delved deeper into exploring the characteristics of people and their reasons for these purchasing trends. Orizio et al. who conducted a systematic review of this literature (published 2011) estimated that around 6% of the general population around the globe are purchasing medicines from internet pharmacies.²³

Orsolini et al. conducted a review (published 2015) to identify the profiles of consumers of online medicines. The authors reported that most customers are of a younger age and mostly men, yet they also reported that there are variations in gender and age depending on what medicine is being purchased. For example, men being more interested in medicines to treat erectile dysfunction. However the authors admit that this could also be due to other factors such as selection bias in the samples that were analysed. Orsolini et al. discussed how having certain technology skills may be the reason that customers are younger, highly educated and have easy access to the internet. Conversely the simplicity of using a search engine by just typing the name of the medicine may explain the diversity in consumers' ages and educational levels.³⁷

Studies that looked at patterns in the purchasing of medicines online have been conducted in a number of countries and in various settings. A survey conducted by Fittler et al, revealed that among 434 patients from Hungarian community pharmacies, 6.2% had already ordered medicines or dietary supplements online and approximately the same percentage intended to buy medicines from the Internet in the future. The most likely internet customers for medicine purchasing were educated people, those aged 30–49 years and women.^{36,37} The main reasons for purchase in this study were economic reasons.³⁷

In a later survey Fittler et al. aimed to understand the practice of internet purchasing of medicines through a survey of Hungarian hospital patients.³⁶ It included questions about whether participants had ordered products from online pharmacies, whether they would do so if lower prices were offered, and their views on the quality of online products. Participants were also asked if they saw any danger with regard to ordering medicines from the internet.³⁶ The authors reported that 8.4% of respondents ordered drugs or dietary supplements online and 3.7% would consider it in the future. Most however were unaware of the quality of these products.³⁶ As opposed to the earlier study of respondents recruited from community pharmacies, this study showed that slightly more male participants bought products online although there was no statistically significant difference according to gender.

Data from 253 patients recruited from 9 pharmacies around Romania revealed that 8.3% had ordered medicinal products via the Internet and 7.1% intended to do so in the future. A much greater number of the total respondents were women. The average age was 39.5 years; with the 18-35 year old group occupied just over half of the respondents. University graduates formed the higher percentage of total respondents. Most were unaware of any potential quality difference with medicinal products obtained from traditional pharmacies. The authors of this study however do not mention how the participants were recruited and have included all products into the same category, not making a distinction between medicines, medicinal products and dietary supplements.³⁸ Therefore one cannot be certain whether the medicinal products ordered via the internet were in effect classified as medicines.

Mazer et al. surveyed Emergency Department (ED) patients in Pennsylvania and found that there was a significant awareness of Internet pharmacies, but only 5% of ED patients reported utilising them. These patients tended to be on multiple medications, and have prescription insurance. Online pharmacy users bought medicines either for themselves, a family member or a friend. Their most common reasons were convenience among 66% of the respondents, followed by cost (40%). Seven percent disclosed that it was the only way to get their medication and only 2% used the internet because the site did not require a prescription.³⁹

Data from the National Cancer Institute's Health Information National Trends Survey (HINTS), 2007, was analysed to identify characteristics of the online buying of medicines and vitamins among a national sample of 5074 internet users in America. The study revealed that 17% of the sample use the internet to access medications and vitamins. The authors highlighted a steady increase in internet usage for purchasing of medicines from 2003, which was in the range of 9%. Among these online buyers, age was found to be an important factor with older adults more likely to purchase medicines online compared to the 18-34year olds.⁴⁰

A survey conducted on the population in Saudi Arabia between 2013 and 2014 concluded that internet purchasing was not yet popular. Only 3% (n=17) of

respondents purchased medicines online yet a good number had indicated to wanting to do so in the future.⁴¹

In conclusion one can see that the patterns of internet purchasing depend on the setting where study is being conducted, recruitment process and country healthcare systems.

2.7 Types of products found and purchased online

The Internet allows access to a large variety of medicinal products including prescription-only medicines (POMs), over-the-counter medicines (OTCs), herbal medicines, supplements and vitamins. It can be a source of medicines not available freely on the local market due to drug shortages.³⁶ Shortages create situations for falsified medicines to enter the market within days.⁴²

Products that may be obtained illegally over the internet include narcotic analgesics such as fentanyl, hydrocodone, methadone, codeine; stimulants such as amphetamine, methylphenidate; antidepressants such as fluoxetine; benzodiazepines such as diazepam.^{43,44} Biologics such as somatropin, human growth hormone, have been investigated and found to be available widely over the internet. An added problem with such a medicine, besides requiring a prescription, is that it also needs to be distributed and handled with strict controlled temperature conditions since the product may degrade and cause safety concerns for the patient.⁴⁵

Other medicines available online include herbal medicines and supplements. Although the latter are sometimes not classified as medicines but rather as borderline substances, safety is still an issue and therefore online purchasing of these products still needs monitoring. Herbal products are usually purchased without supervision from any health professional.⁴⁶ Owens et al. conducted an online search of 13 common herbals (including black cohosh, echinacea, garlic, ginkgo, ginseng, green tea, kava, saw palmetto, and St John's wort) and reviewed the top 50 Web sites for each using a Google search. A total of 1179 Web sites were examined and analysed for clinical claims, warnings and other

safety information. The results showed that less than 8% of retail sites provided information regarding potential adverse effects, drug interactions, and other safety information and only 10.5% recommended consultation with a healthcare professional. Less than 3% cited scientific literature to accompany their claims. The authors claim that important safety information is still lacking from many online sources of herbal information and they also suggest that healthcare professionals should be aware of quality variability to subsequently inform and guide their patients.⁴⁶

MHRA has recently reported in November 2017, that 1 in 3 individuals who are trying to lose weight, bought slimming products online. Forty-four (44%) percent of them gave reasons that they did not want to speak to a GP or pharmacist about their problem. A large number of them (63%) reported suffering from unpleasant side effects. The report referred to 2016 when more than 4.6 million fake medicinal products were seized by MHRA who also closed down more than 5000 websites selling medicines illegally.⁴⁷

About 4000 POM medicines intercepted at the mailing centre in New Zealand were analysed to identify the types of medicines people import. These were commonly imported from India and China, the majority being considered as 'lifestyle' drugs (such as tadalafil, sibutramine (appetite suppressant used for weight-loss)). A large proportion were antibiotics already available as a subsidised medicine in New Zealand and therefore the study highlighted concerns with issue of antibiotic resistance.⁴⁸

The official medicines control laboratory in Italy has analysed samples of suspicious products seized from various entities including postal packages addressed to citizens from online purchases. They found a range of products. Amongst the medicines seized, 34% were medicines to treat erectile dysfunction such as tadalafil, 37% were doping substances such as anabolic steroids, 22% were POM medicines as categorised in Italy while 4% were diet supplements of which some contained chemicals such as sibutramine and phenolphthalein which are chemicals that have been banned in the past for serious adverse effects. The authors of this study have linked a health risk with consumer's consumption of medicines purchased over the Internet. Their

conclusion of this survey is that customers perceive such food supplements as 'riskless' especially with products that are labeled as 'natural'.^{49,50}

Another analysis by Liang et al. undertaken examined vaccine online availability by assessing up to five identified online sellers. It was determined whether sites were accredited by the National Association of Boards of Pharmacy (NABP) or if they were on the NABP Not Recommended list. All vaccines were advertised by online pharmacies and social media sites, though none were accredited. In addition, the sites were on the "Not Recommended list"⁵¹ of the Pharmacy Boards Association (NABP).

2.8 The forsaken prescription

No one knows exactly how many people buy prescription medicines online but some estimates have predicted it is up to 5 million in America and 2 million in the UK.^{44,52} POMs need to be supervised because they can be considered as medicines that if used differently as prescribed could pose a safety problem to the patient. Also the prescriber would need to keep the patient monitored for any side effects or interactions that may occur and may therefore need to change the treatment of the patient accordingly.⁴⁴ The EurActiv Network (2010) claims that one in five Europeans (representing over 77 million people), put themselves at risk by purchasing prescription-only medicines without a prescription.⁵³ A 2009 survey of GPs in the UK found 25% had treated a patient who had experienced an adverse effect from a drug bought online.⁵² A review article by Jackson et al. highlights that 33% of 423 UK doctors that took part in a survey for the medical newspaper *GP* said that they had or suspected that they had treated a patient for side effects of substandard POMs purchased online.⁵⁴ In another survey highlighted in this review of 2076 UK adults, the MHRA found that more than one in seven admitted to purchasing POMs without a prescription even though 78% of doctors believe that patients risk their health and even their life by doing so.⁵⁴

The problem with purchasing medicines outside the local supply chain is not only the existence of counterfeit and falsified medicines as will be explained

later but also the fact that patients are getting medicines that should be under control through the presentation of a medical prescription. Most online sources do not request such documentation and therefore patients are finding a channel to obtain what they want without any guidance or supervision from the health practitioner or pharmacist.

An observational study focusing on how 3 POMs can be acquired was conducted by Bassam et al. It showed that over two-thirds of the websites in this study were willing to supply consumers with POMs without a prescription despite the legality of having a prescription in the UK. Three-quarters of the remaining websites would sell based on a faxed prescription, and approximately two-thirds with an emailed prescription. As Bassam et al. discuss, they found alarming that a consumer could fax or email the prescription to many different pharmacies, which contravenes the definition of a valid prescription.⁴⁴

A systematic review carried out by Orizio et al. showed that some websites sold prescription only medicines (POM) without a prescription but used an online questionnaire as a tool instead. Sites claim that the questionnaire is reviewed by a prescriber whose credentials and often identity of these “cyber-physicians” is not disclosed.³⁹ In addition, the whole dispensing process may be compromised since the pharmacist’s medication review may be bypassed leading to missed interactions and missed advice.³⁹ A serious illness could be missed due to attempting to self-diagnose.⁵⁵

A content analysis of 57 online medical questionnaires was conducted by Orizio et al. They examined a sample of online pharmacies’ (OPs) online questionnaires for completeness. They reported that drug allergies were queried in 96.5% of the OPs and other allergies in 70.2%. All of the questionnaires asked whether the consumer had suffered or was currently suffering from a particular illness, but a question about past surgery was present in 40.3% only; 70.2% asked women if they were pregnant or breastfeeding. Only 52.6% asked if the consumer's family doctor was aware of his/her intention of buying online. Orizio’s conclusion of the results was that online pharmacy medical questionnaires are inadequate in assessing the health status for prescribing drugs and results suggest that such questionnaires aim

more at giving the consumer a “*false sense of health assurance than performing an effective assessment of his or her health status relative to the drug purchase.*”⁵⁶

A study published in 2009 and conducted by Raine et al. investigated the availability of analgesics in the UK and reported that POM of analgesics and controlled opioids such codeine are readily available online and can be purchased without a prescription.⁴⁴ A 2004 testimony of an investigation conducted by the US General Accounting Office that examined 90 orders placed for narcotic prescription drugs without a prescription, resulted in 50% of these being dispensed by non-prescription websites.³⁹ Mazer et al. discuss that since these sites do not undergo the scrutiny expected of registered pharmacy sites and therefore such practices may result in patient cases at the Emergency Department (ED) due to several types of reactions including drug interactions, side effect and problems of addiction.³⁹

2.9 Regulating Internet activity

Mazer et al. has discussed the several attempts to regulate online pharmacies and to promote both consumer and provider education regarding online pharmacies. The first major attempt to regulate the internet was in 1999. Initiatives have been developed to address the huge number of internationally operated illegitimate online pharmacies and the high volume of global sales of illegal and counterfeit medicines.³⁶ Regulatory authorities and international professional organisations have been focusing on the development of policies with the aim of educating internet customers about counterfeit medicines and the potential public health risks that concerns the population.

Orizio et al.’s review suggests that a “*2-level approach*” is needed to enhance the benefits and minimise the risks of online pharmacies. The first level should focus on an international level through policy and regulatory laws, while the second level should focus on the individual. In this manner, the approach is aimed at increasing awareness and responsibility on the individual’s part that

will in turn increase the quality of health literacy. Individuals may then make better health choices, recognise risks and safety concerns and at the same time maximise their alternatives and opportunities offered by the vast world of medicine out there.²³

In the UK, the MHRA launched an initiative against counterfeit medicines and one of the alerts and recommendations that it focuses on is to educate people about what they should be aware of when ordering medications online.⁵⁴ Through survey interviews conducted amongst 5000 consumers in five European countries, including UK, conclusions were drawn that awareness of counterfeits was moderate with 61% saying they know prescription drugs can be faked. Awareness was higher in the UK, at 75%.⁵⁷

American online pharmacies that are found to be compliant with state laws by the National Association of Boards of Pharmacy would generally bear a logo of the Verified Internet Pharmacy Practice Sites. Pharmacies associated with this organisation would have demonstrated certain credentials such as safe and legal practices, including pharmacist counseling, and dispense medicines as expected from good manufacturing practices.³⁹

Germany and Great Britain also developed certification logos to guide patients in ensuring that the medicines they are purchasing are legitimate and not counterfeit.³⁶

In addition, the WHO took an active role to draw the attention of patients and health professionals to the dangers of counterfeit medicines by establishing an International Medical Products Anti Counterfeiting Task Force (IMPACT) in order to bring together all stakeholders to fight counterfeit medical products. A toolkit was developed to assist health professionals e.g. pharmacists and physicians to tackle counterfeit medicines in their daily practice.⁵⁸ Another WHO initiative was the enforcement of a reporting system for counterfeit medicines that commenced in July 2013. Within less than 1 year of its commencement, 335 incident reports of suspected cases were reported to the WHO and which were then investigated.

A recently published review covered what measures are being taken at different

levels to combat falsified medicines. Studies were identified to address measurements taken at national, international, pharmacy, internet security and drug verification systems at the consumer level.⁵⁹ Collaboration at all these levels are key to successful control of this phenomenon. Various organisations that work in this field have already been mentioned such as INTERPOL and IMPACT. Collaborative organisations were also formed such as World Health Professions Alliance (WHPA).⁶⁰ At the pharmacist and consumer level there are guides such as WHO Checklist⁶⁵ and mobile authentication services.⁵⁹

The consumer is a crucial part in the problem of fake medicines circulation. As directly stated by senior policy MHRA advice, the problem of supply is only a part of it, while the demand is actually the root cause. This in turn generates the illegal business and circulation of fake medicines. Once consumers keep searching for medicines online, then illegal trade is likely to go on and therefore the only way to keep the risks low is by educating the consumer.⁶¹

A medicines' pack identifier system is a global serialisation requirement that includes individual product codes and that is going to be implemented through the pharmaceutical manufacturers. Serialisation is about to be implemented in the USA at the end of 2017 and in Europe in early 2019.⁴²

Following their survey, Fittler et al. suggested that pharmacists should keep in touch with their patients and alert them about counterfeit medicines available over the internet especially when considering the potential direct and indirect dangers these products can cause.³⁶ The Royal Pharmaceutical Society in association with Pfizer in December 2012 revealed statistics that customers had reported to half of pharmacists who took part in a survey in UK, that they were buying prescription medicines online without a prescription.⁶² Therefore pharmacists can play an essential role in educating about the purpose of purchasing medicines with a prescription if the type of medicine is classified as a POM. Furthermore pharmacists can educate about prevention of purchasing from illegal illegitimate sources.

2.10 Advantages versus risks of internet purchasing

The Internet has the characteristic of being appealing to customers due to its speed, convenience and cost.⁵⁴ People generally seek speed, safety, quality and lower prices.⁶³ Fittler et al also report convenience as one of the most regularly communicated benefits as there is no need to visit a medical doctor or go personally to a local pharmacy.³⁶ Access is allowed at any time of day, from any country at prices that patients can compare - often allowing them to have lower prices than from traditional pharmacies.^{27,36} Patients may also feel that the lack of face-to-face communication avoids them getting into hypothetically embarrassing conversations with the pharmacist in a busy pharmacy.^{27,36}

The largest concern with obtaining medicines through the internet is the lack of effective regulation.¹⁸ Prescription drugs can be obtained without a valid doctor's order because some websites claim that such medicines can be sold following online questionnaires that are seen to assess the patient's health for possible safety concerns with the treatment being ordered.³⁶ Table 2.1 lists advantages and disadvantages associated with Internet and purchasing medicines.

As described by Fittler et al, although the risks associated with online medications can be minimised if medicines are bought through verifiable, approved and regulated online pharmacies, the actual pathway of internet supply of medicines has numerous disadvantages, concerns and risks. The authors highlight the existence of high-risk online sources that are frequent over the internet and in turn many people may be unaware that they may be purchasing medicines from potentially illegal and unauthorised websites or distributors.³⁶ Purchasing medicines outside the local supply chain poses risks especially because the local health authorities cannot control and monitor what is happening with such medicines and their outcomes. There are also the associated concerns raised in the past about the storage conditions such as extreme temperature differences that may affect the integrity of the medicines during the shipment process.²⁷

This fact has been acknowledged to warrant some form of internet regulation

however due to different laws across different states and countries, this has been discerned as being almost impossible.²⁷ This is also true across the globe where laws are different for different countries. Furthermore, personal data protection, privacy and credit card data security are not guaranteed through such activity.³⁶

The advantage mentioned earlier of avoiding personal communication can in itself lead to misuse of drugs, because of the lack of advice usually given by the pharmacist at the physical point of sale. In addition, getting supply outside the local healthcare system means that patients will be self-diagnosing and this can lead to delaying appropriate management of serious illnesses. Also drug interactions or adverse effects that may occur with these medicines may not be dealt with immediately.³⁶ Furthermore, little is known about patients who use internet pharmacies and this is a concern because there are several groups who require special advice regarding medicines such as females of child bearing age or breastfeeding mothers etc. A study in fact showed how isotretinoin (used to treat severe acne) is available from sites that do not require a prescription and moreover some of these sites lack the information about the dramatic side effects of birth defects with this medicine if pregnancy or planning pregnancy. The use of such a teratogenic drug should in fact be used in strict adherence and supplied in accordance with the Pregnancy Prevention Programme yet those supplying it via the Internet are not providing this care for women.⁶⁴

There is also the possible abuse of *controlled* prescription medications due to the different classification of such medicines within different countries. A 2007 report issued by the International Narcotics Control Board, claimed that in USA in 2006, 34 illegal internet pharmacies dispensed more than 98 million dosage units of hydrocodone products.^{43,65}

Concerns raised are evident through several fatal reports on newspapers such as the Laura Lambden case; a UK paramedic who worked on shifts and obtained tablets to help her sleep.⁶⁶ Another example was reported in the mirror.co.uk in April 2013; a medical student who died after taking a banned weight loss drug that she obtained online.⁶⁷

Table 2.1 Advantages and potential disadvantages of obtaining medicines from internet pharmacies around the world

<p>Advantages/benefits</p> <ul style="list-style-type: none"> • Convenience • Comparison shopping • Increased consumer information • Privacy and anonymity • Freedom from time and location • Elimination of barriers for people with disabilities • Variety of available medications • Affordable lower prices • Opportunity to purchase pharmaceuticals from other countries <p>Disadvantages/concerns</p> <ul style="list-style-type: none"> • Lack of face-to-face communication • Increased risk of polypharmacy, drug interactions and non-adherence • Questionable integrity of drugs due to inappropriate storage or shipment • Different drug names, foreign labels • Differences in drug classification between countries • Direct to consumer advertising of prescription-only medicines • Lack of effective international regulation • Self-misdiagnosis • Abuse of controlled prescription medications

Table 2.1 is being used with the permission of Andras Fittler³⁶

2.11 Counterfeit medicines

Due to its nature, the Internet is a vast and convenient route for counterfeiters to reach buyers with unregulated products. Although in general, consumers acknowledge some degree of risk with purchasing medicines via internet, adverse effects and deaths have resulted from the use of such products.⁵⁴

'Rogue' online pharmacies are claimed to be sources of counterfeit products due to their activity of selling medications of unknown origins without prescriptions.³⁶ A few studies have been conducted to identify the reliability of online pharmacies. According to a study published in 2013, it was concluded that most internet pharmacies within a sample of 136 internet pharmacy websites identified through the Google search engine were 'rogue' internet pharmacies.⁶⁸ It has also been shown that only 6% of the internet pharmacies requested a medical prescription before allowing the purchase to be effected. It has also been documented that large volumes of spam emails advertise sites that turn out to be selling counterfeit medicines.⁵⁴ As already mentioned, shortages are a concern and shortage of drug products is another market that attracts businesses that subsequently offer these problem medications from unknown origins and very high prices.³⁶

WHO has defined counterfeit medicines to be *"medicines that are fraudulently mislabelled, contain wrong ingredients, absent of active ingredients, contain insufficient active or over-active ingredients or have fake packaging."*⁵³ These products are notorious in that they are deceiving not only to the patients but also to the health professionals.³⁶ While Europeans are estimated to spend 10.5 billion Euros annually on prescription-only medicines from illicit sources, global sales of counterfeit medications was expected to be US 75 billion dollars in 2010.³⁶ Healthcare organisations, manufacturers and governments have long realised this phenomenon but, still to date, law enforcement towards a regulated internet is a global international unresolved problem.³⁶

It has been estimated (publication 2012) that 15% of drugs worldwide could be counterfeit, with close to 50% in some developing countries. Exposure to such products has increased dramatically due to importation by the consumer of

prescription medicines through internet sites and lack of consideration of barriers when purchasing online.⁵³ There is a claim that in industrialised countries, counterfeits had a market share of 1%, 10% globally but up to 30% in some regions.⁴² In 2007, the EU has registered an increase of 380% of counterfeit medicines seized at EU borders when compared to 2005.⁶⁹ However updates, through a JPAG symposium held in June 2107, reported that the rate of falsified medicines in Europe is low.⁴²

WHO also estimates that 50% of the drugs for sale on the internet are counterfeit.^{44,52} Lancet reported that head of Pfizer's Global Security team, Clark has seen estimates of the markets' worth ranging from US 70 to 200 billion dollars, but the truth is that "*no one has their hands around the exact size of the global problem.*"⁵²

A cross-sectional study analysing circulation of anti-obesity medicines via the Internet and their quality, confirmed three cases out of 52 samples to be counterfeit. This was established following pharmacopoeial analysis and authenticity investigation. The study was published in 2012 and concluded that many anti-obesity products may exist as counterfeits and may be bypassing checks and scrutiny during shipping and therefore are easily found circulating the internet.⁷⁰

Alliance for Safe Online Pharmacies (ASOP) was founded in 2009 and is an international non-profit organisation whose headquarters are in Washington D C with operations in Europe and Asia. In 2015, ASOP claimed that of the 35,000-50,000 active drug sellers, 97% do not comply with US laws and 50% of medicines sold online are fake or counterfeit.⁷¹

In June 2015, an Interpol^{a1} operation, Pangea VIII, seized a record of 20.7 million fake and illegal medicines. These included blood pressure medication, erectile dysfunction pills, cancer medication and nutritional supplements. The

a¹ The Permanent Forum on International Pharmaceutical Crime and various police, customs and national medicines regulatory agencies from 81 country participants, as well as the help of the Pharmaceutical Security Institute, Internet Service Providers (ISPs), payment systems providers and delivery services.

operation is an international campaign involving police, customs, national drug regulators and internet service providers, that regularly takes action against online counterfeit drug crime and had taken action to shutdown hundreds of illegal websites besides the seizure of illicit and counterfeit medicines worth millions.³⁶ The operation also resulted in 550 adverts removed from the internet and more than 2,410 websites taken offline. Two websites, that advertised the sale of dinitrophenol (DNP), a lethal diet drug, were shut down.⁷² The Guardian had in fact reported the death of a 21-year old in relation to the consumption of DNP pills bought over the internet to lose weight.⁷³

Traditionally the biggest producers of fake drugs have been China and India.^{52, 74} A large counterfeit market with proximity to the EU free trade zone is Russia^{52,53} where the generally accepted estimate is that 10-12% of drugs are counterfeit. Since the Baltic nations of Latvia, Lithuania and Estonia have joined the European Union, the WHO had warned about the increased risk of counterfeits entering the EU supply chain.⁵³

Brokers may have a part in the transportation of products from one country to another. They get involved for example when there is a shortage in one country and excess in another. Pharmaceuticals will be repackaged with translated instruction leaflets; however this is the point where counterfeits can enter the supply chain since local staff may not be aware of the differences in blister packaging between member states and assume the product is genuine. This is how a typical case of Plavix entered the UK supply chain some years ago.⁷⁴ This parallel distribution system is discussed further here below.

2.12 Parallel-importation

Parallel-importation is a legal activity that has however contributed to cases of counterfeits in the past. The activity of parallel importation involves the importing of a medicinal product into a country from another Member State following which it is distributed outside the original authorised distribution chain as that intended from the manufacturer and authorised distributor.⁷⁵

Alarming stories of counterfeit medicines hit the headlines in the UK in 2004, when batches of counterfeit Zyprexa® (olanzapine), an antipsychotic, were found in the legitimate British supply chain.⁷⁶ Only a few days later did the MHRA have to alert again with another counterfeit medicine, Plavix® (clopidogrel), antiplatelet that prevents blood clots. The MHRA had reported that stock was presented as French livery cartons with overlabels or recartoned into an English pack by the distributor.⁷⁷ This was a common practice of parallel distribution repackaging processes common throughout the EU.

This type of importation is a legal activity however parallel importation may be restricted if it has the potential of any risks to protecting human life and to the industrial and commercial property protection.⁷⁵ Parallel importation unfortunately leaves large gaps where mistakes could happen such as medicine labels having the incorrect dosage strength.

Harper authored a report for the European Alliance for Access to Safe Medicines in which he has brought together various documents about the safety of parallel trading. His report quotes that in around 2006, about 140 million individual drug packages were parallel-imported throughout the European Union and he further claims that a wholesaler repackaged each one of them. He claims that parallel traders are not concerned about safety but rather in the business that comes out of it and therefore mistakes are more prone to happen. Mistakes that happened included incorrect dosage strengths on labels, bath and expiry dates not matching between inner and outer package, out of date patient information and also inappropriate languages. Harper reports that around 2006, parallel-traded medicines accounted for about 20% of all prescriptions filled by British pharmacies.⁷⁸

2.13 Local Supply chain: also a target for counterfeiters

Quality of medicines was seldom doubted prior to issues emerging with medicines sold over the Internet. Quality was “*an unquestionable property of medicines.*”³⁶ This is especially true since in the past patients used to rely on the legitimate supply chain as a sole source of medicines. However, there were

cases when patients received low quality or unsafe medicines due to the infiltration of counterfeit medicines into the legitimate supply chain.

According to the MHRA, referred to by Fittler et al., only a small number of counterfeit medicines have reached the legitimate pharmaceutical supply chain in developed countries due to effective regulatory systems, of the industrialised countries and the European Union. In 2012, the MHRA had claimed that the incidence of these low quality medicines was estimated to be low (less than 1% of market value) with an example of UK having only nine recalls of medicines that had reached community pharmacists occurred around 2010 to 2012.³⁶

The process from manufacture to pharmacy can be complex. Manufacture can occur in one country and then the product is imported for export. These are the opportunities that result in these products being redirected and enter the legal distribution chain.⁶⁹

Conclusions from a global assessment of counterfeit reports involving the legitimate supply chain using 2009-2011 data from the Pharmaceutical Security Institute Counterfeit Incident System (PSI CIS), claim that the middle-income countries (as classified by the World Bank), seem to have the greater potential for counterfeit production and penetration in their legitimate supply chain. Many of these countries are emerging markets and weaknesses in their systems with regards to counterfeits and export, impact on the global patient safety.⁷⁹

So far, there are no reports of incidents related to falsified medicines products having entered the Maltese legitimate supply chain.^{79,80}

2.14 Law in Malta as an EU member state on pharmacy activity

As a member state, the legal supply chain in Malta is regulated by means of EU and national legislation. The EU has a strong legal framework for the licensing, manufacturing and distribution of medicines.⁸¹ The Medicines Act of Malta and the Pharmacy Licence Regulations provide only for the establishment of physical community pharmacies and therefore does not cater for the setup of internet pharmacies in Malta.

The European Commission has strengthened the protection of patients and consumers against falsified medicines entering the legal supply chain, by adopting a new **Directive** on falsified medicines for human use (Directive 2011/62/EU). It introduces harmonised safety and strengthened control measures, across the EU, including outer packaging obligatory features, obligatory logo amongst other procedures.⁸¹

As from June 2015, a common logo was introduced to be used by all internet pharmacies established within any member state in the EU. This logo allows verification of authenticity through a link to a list of notified internet pharmacies on the website of the regulatory authority in that particular member state. There is a further obligation that the internet pharmacy established in the EU can only supply their customers with medicines authorised in the member state of that particular customer. This is in view of the fact that medicines are classified differently between countries as to whether they are POM or OTC.¹⁹

2.15 Scope of study for Malta

The source of medicines is important to ensure quality and safety of treatment. Although counterfeits have been reported to penetrate legitimate supply chains in various countries, the internet offers ample opportunities for illegal activity due to its nature. As much as there may be the advantage of obtaining cheaper medicines, there is also the concern about potential risks if patients do not differentiate between legal and illegal online pharmacies. There is also a situation where dangerous medicines are being provided to patients without prescriptions without guidance on their use (in relation to their specific needs), adverse effects or interactions.

A study conducted by Gatt Baldacchino in Malta, concludes that 5% of the responses from participants received, declared that they used the internet to purchase medicines mainly because of lower cost and lack of availability locally. The author claims that 19% of those who responded (n=915) to a question on safety, felt that buying medicines online was as safe as buying medicines from a local pharmacy, while the rest reported the contrary.⁸² Gatt Baldacchino

makes reference to the number of respondents she received but this is not clear as to what percentage this was in relation to the original sample. Also, there is not enough depth as to what type of medicines were bought since the term 'medicines' was taken in the broader sense to include any medicinal product. It is therefore still not clear what the scenario in the general population is. In this respect a national survey using a random sample from the general population is extremely important to gather reliable data through a robust methodology so as to have a better picture on Maltese trends of purchasing medicines.

In Malta, the community pharmacist is considered as the core health professional within the community that monitors the patients with their treatment. A recent study done in 2010 by Wirth et al. about consumer perception of the community pharmacist in Malta claims that the majority of consumers (around 90%) surveyed visit the pharmacy mainly to purchase prescription medicines, while 65% of them visit to purchase non-prescription medicines. It was also found that the majority (75%) confirmed that they would rely on the community pharmacist's choice when purchasing a non-prescription medication. Only 11% sought advice about their health from the pharmacist, 76% from the physician, 10% from family and friends and only 4% would get advice from the internet.¹

It is therefore clear that Maltese consumers use the local community pharmacy as their primary choice for healthcare supplies. Although a small proportion seems to use the Internet for advice, it is now time to understand in more depth what other services customers explore through the Internet. Malta's situation is particular because of its small size and dense population. Pharmacies are found in several locations in Malta and Gozo within short distances from each other. However it is important to see how alternative routes of supply such as Internet may impact on such a scenario as well as on the safety of the medicinal supply for the Maltese residents.

Internet purchasing of medicines including herbals and vitamins can be risky for the Maltese due to three types of situations:

1. Counterfeits
2. Purchasing POM medicines without prescriptions
3. The bypassing of pharmacists' intervention on dispensing both POM and OTC medication. The pharmacist's role can be instrumental in preventing interactions between medicines and liaises with the prescriber when problems with treatments arise.

Therefore research is required to understand trends and practices in relation to medicines buying within the Maltese population. There is also the question of where such supplies are being acquired from and the reliability of the sources. Medicines imported through the official supply channel are authorised through the Maltese Medicines Authority and therefore issues related to safety and pharmacovigilance are taken care of through this department. However, safety in relation to medication imported to Malta through alternative routes, cannot be guaranteed and therefore many concerns may arise due to counterfeit or falsified medicines leading to situations of adverse effects and toxicity.

It is currently unclear how patients and the general population acquire their medicinal supply and with 77% of the total population aged 16 to 74 using internet regularly,⁸³ such a possibility is important to investigate.

It is known that through the local National Health Service, many medicines are supplied free of charge depending on the condition. However what is not known is whether these supplies are in fact adequate and whether they are satisfying the needs of the patients. An in-depth exploratory study is essential to identify the trends amongst the Maltese population with respect to purchasing medicines. This research will also explore the awareness of the Maltese population regarding risks associated with buying medicines outside the local market. Only with such results, can concerns about unsafe supplies of medicines be raised to the local authorities.

2.16 Purpose of Research – Research Question

1. What is the scenario in Malta with respect to purchasing medicines supplies particularly from sources other than the local market?
2. What are the reasons that drive Maltese patients to purchase their medical supplies overseas? Are they aware of the risks implied?

2.17 Aim of Research

To describe the practices and concerns of the Maltese population with respect to purchasing medicines locally as well as outside the local market.

2.18 Objectives of Research

To describe purchasing patterns among Maltese residents who are seeking supplies of medicines overseas.

To identify routes including the use of internet or travelling abroad to purchase medicines

To identify and describe reasons for such practices

To describe the concerns and problems people have with respect to accessing medicines

Chapter 3 Methodology

The literature review described in chapter 2 shows that there are different medicinal purchasing patterns among domestic customers across various countries. These patterns vary according to practices, culture, beliefs and laws and therefore different realities exist around the world due to diversity of these factors. Each country has its own healthcare system with its own limitations with regards to availability of medicines. In most countries, internet purchasing occurs from registered online pharmacies that are an extension of the brick-and-mortar setup. However, research has also identified the use of other online websites that may be more liberal into the selling of medicines such as supplying POM medicines without prescriptions. Furthermore there is the concern of counterfeits that may reach the patient through their diffusion into the legitimate supply chain.

As described in chapter 2, studies have been conducted to explore the purchasing trends of medicines among customers in various ways within various countries. These included national surveys, surveys conducted in specific settings such as hospitals and accident and emergency (A&E) departments and systematic reviews. In Malta, the law does not cater for internet pharmacies and therefore Maltese customers who purchase medicines through internet would be importing the products from outside the local supply chain for their personal use. Although attempts were made by local researchers to investigate internet use for the purchasing of medicines among the Maltese population, a national study with a robust methodology was still lacking. Local research also lacked the types of medicines that were actually being bought, and there is also a lack of information that can address the 'why' of such practices. Therefore an explanatory study with a sound methodology was needed to fill in the gaps of knowledge regarding trends of the general Maltese public about purchasing of medicines with particular focus on the use of internet.

In this context, research was needed both to fill a gap in knowledge and at the same time to understand the reasons of what is actually happening in Malta with respect to purchasing of medicines. This standpoint set the pathway for the researcher's beliefs and assumptions, in other words the research paradigm, that

subsequently underpins the research approach. This in turn is reflected in the methodology and methods used to produce that knowledge.^{84,85,86,87}

There are several assumptions and misconceptions researchers make within research paradigms. One such misconception was written about by Johnson & Onwuegbuzie regarding common confusion between epistemology and research methods.⁸⁵ Therefore it is important to state what is understood by 'methodology'. As explained by Braun & Clarke, methodology refers to the framework or procedure used for the research.⁸⁴ It lays out the strategy that will address how the data is collected and analysed to acquire the knowledge required.^{84,86,87}

However before describing the methodology adopted in this study, one must explain the ontological and epistemological assumptions that informed it.

3.1 Research paradigm

The researcher's assumptions and beliefs stemmed from the idea that internet forms part of everyday life for people in Malta just like other people around the rest of the world. With 77%⁸³ of the Maltese population being internet users, and the probability of purchasing so many products, curiosity was raised about the possibility of acquiring medicines also through this route. Further to this, due to aspects of the National Health Service, medicines may be supplied free of charge for several conditions to Maltese residents. Therefore, in addition to identifying the scenario of what is really going on, it would also be necessary to understand the reasons why customers would or would not use the medicines available locally and consequently the reasons that drive customers to purchase or not to purchase medicines from the Internet.

Therefore the researcher's belief lies in the very fact that since internet use is so prolific and Maltese boast tremendously about all the things they purchase online, it is probable that many users may also be purchasing different types of medicines online for various reasons.

As a starting point the researcher believed that knowledge was needed about the truth that lies out there, about what the practices involved with obtaining medicines' supply are from an objective point of view. Therefore at first the ontological position was that of the belief that there is one reality, that of whether the Maltese purchase medicines online or not. The corresponding epistemological position was that the knowledge was needed to be obtained through reliable and valid tools. It is also important to have a reliable sample and therefore a random sample of the population was deemed fundamental to obtaining statistics that could be attributed and generalised for the whole population.

This view is in line with what is expected from a realist. Realism is based on the ontological position of positivism and the notion that only one truth exists out there and that it is independent and separate from any human input or interpretations.⁸⁴ The epistemological component associated with positivism (realist) is that of objectivism on the part of the researcher who goes about acquiring knowledge about the objective reality.⁸⁷ These two philosophical assumptions are the basis for a scientific research paradigm⁸⁷ in which the truth is assumed to be value-free and outside any context, and is simply observed by the positivist researcher who most likely warrants a quantitative methodology to obtain this data.

Therefore, quantitative research supports the objective ontology with a positivist epistemological approach that governs the basis for the conventional and traditional scientific methodology that seeks to understand causal relationships. It involves predictions and generalisations, descriptive and inferential statistics which subsequently allows generalisations to populations.^{88,87}

The issue with this paradigm is the extent to which a quantitative result can be applied to a specific case when one considers individual variability.⁸⁹ McDowell wrote that quantitative methodology may simplify the diversity of reality and therefore it may be giving an over-simplified idea of the truth.⁸⁹

Johnson and Onwuegbuzie speak of objectivity and value-free research as being a myth⁸⁵ since judgments and decisions are still being made during the research

process such as selection of variables. This type of research also has the drawback that when statistics are generalised, the intentionality of the participant is completely ignored. Participants may be filling a questionnaire for different reasons and this hidden variability cannot be measured empirically.⁸⁷

These limitations of the quantitative paradigm were the reasons why the researcher wanted to delve deeper into the 'why' of the participants' answers to the quantitative study. It was important to understand the participants' in-depth stories and experiences about what drives them towards purchasing or not purchasing from Internet. In sequence to the quantitative part of the study, the researcher wanted to also adopt a relativist position based upon an ontological constructivist position.

Relativism here refers to multiple realities constructed through experiences of various individuals within context. The constructionist epistemological position in relation to relativism is an interpretivist, subjective, approach in creating the knowledge.⁸⁷ One can see the difference from the realist and positivist positions in that there is no singular truth or knowledge but rather there are many possible ways that involve one's interpretations of these truths and the knowledge constructed within context. The basic distinction between epistemological positions of these two major traditional paradigms is whether reality is *discovered* through the process of research or whether reality is *created* through the process of research.⁸⁴ These assumptions now form the basis for the interpretive paradigm that in turn lends towards the qualitative approach.

Qualitative research allows for the generation of detailed and rich data that sheds light on the worlds that exist in the individuals' heads. It is concerned with words and sometimes images and it is typically divided into experiential and critical camps.⁸⁴ The former validates the meanings and experiences expressed in the data, giving priority to the participants' interpretations and accepting them for what they are. The critical qualitative research questions the meanings and experiences and is subject to the researcher's or analyst's interpretations as being more important than those of the participants.⁸⁴ Whichever type, a qualitative paradigm may not provide a representation of the reality expressed by

the rest of the data since it comes from a different theoretical position than quantitative and experimental research.^{84,89}

Similarly to the opposite paradigm, qualitative research also has its limitations namely that of validity. It is also not enough as stand-alone research evidence because the knowledge that emerges is highly contextualised and generally ranks low in the hierarchy of evidence. However such research is still valuable to answer questions about whether the policy will work in the particular scenario.⁵⁴

In summary, a relativist/constructionist position is accepting that there are various realities that contribute to the process of knowledge as opposed to the realist/positivist position. The relativist/constructionist position would adopt a qualitative paradigm that tells us that knowledge can be generated through looking at the meaning of individuals even through small samples and that it is created within context.⁸⁴

Limitations exist with both types of research approaches. Such limitations could be counteracted by blending both methodologies and in therefore generating a superior research quality. The approach required for this study was to adopt both philosophical aspects and therefore it was necessary to explore further existing beliefs that would enable a combination of philosophies. Hence the adoption of the third paradigm, “mixed methods.”

Mixed methods approach is not a simply coalition of the other two paradigms. It has its own philosophical underpinning and is described later in this chapter. “Mixed methods”, emerged from the 1990s onwards, establishing itself alongside the other paradigms. As Johnson et al. stated, all three, quantitative, qualitative, and mixed methods paradigms thrive and coexist in the research world.⁹⁰

3.2 Mixed Methods approach: the relationship between quantitative and qualitative components

The positivist paradigm, linked with quantitative methodologies, has been dominant since the 1950s. It was in the mid-1970s that an era started to

develop where the constructivist research paradigm, qualitative methodologies, became established as an alternative belief.⁹⁰ From the 1990s, emerged the synthesis of both paradigms as a result of their history of their polarisation and therefore has been recognised as a third major research paradigm along with the other two.⁹¹

There are differing views on how quantitative and qualitative approaches should be used within the same project. For some researchers, such as Morse, the philosophical standpoints of these two methodologies are considered to be incompatible, resulting in their parallel use with each maintaining their strengths⁹⁰ while others such as Hardy & Bryman brought the two together and have combined their use as a result of their efforts to highlight the similarities between the two.⁹⁰

This paradigm has been given several names and definitions by leading researchers in the field,⁹¹ among which is Creswell's given as the following definition and quoted by Johnson et al.:

Mixed methods research is a research design (or methodology) in which the researcher collects, analyzes and mixes (integrates or connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry. (119)

Mixed method research can take place in various options and combinations. One can mix qualitative and quantitative approaches across the stages such as performing qualitative and quantitative analysis on data collected qualitatively or there can be completely separate qualitative and quantitative phases which are carried out sequentially or concurrently and then the findings are integrated at some point. The researcher must also decide whether both approaches should be equal or whether one may be dominant over the other. These various combinations are possible to effectively answer the research aims and question.⁸⁵

Many classifications of mixed methods design have been created over the past years. Various social and science disciplines within health, psychological, social and philosophical research worlds have their classifications and terminologies,

yet there is plenty of overlap of these terms. Classifications emerge as a result of the weightings and timings given to the major paradigms.

Creswell (2006) highlights four main mixed method designs that encompass many other variants within. These are the Triangulation design, Embedded design, Explanatory design and the Exploratory design.⁹²

The most appropriate mixed method design to answer the research question in the current study was the Explanatory two-phase design. This involves a first phase that typically consists of a quantitative study followed by a second phase through a qualitative study with the aim of helping to explain or build upon the results obtained from the quantitative phase. Although this was a typical Explanatory design, there was an element of triangulation in the first phase of the study. Further details of the design are explained later in the chapter.

3.3 Pragmatism

Pragmatism is the philosophy that underpins the Mixed Methods approach in this research project. It provides an approach of assuming multiple viewpoints and perspectives, distinguishing it from the purist standpoints of positivist quantitative or interpretivist qualitative philosophies.^{90,91} Other paradigms that underpin mixed methods include critical realism. The '*critical realist*' position also lies somewhere in between these two views and claims that some 'authentic' reality exists to produce knowledge that might make a difference.⁸⁴ It can also be seen as a paradigm that retains an interest in understanding truth, and hence has a realist dimension.⁸⁴ Yet the main characteristic of critical realism is that the reality is questioned and this is why a pragmatic approach was more appropriate for the research question of this study.^{93,94}

Researchers like Creswell (2003), Creswell & Plano Clark (2007) and Tashakkori & Teddlie (1998, 2003) have worked and written about the contrast of Mixed Methods approach with the traditional research paradigms that usually favour either quantitative or qualitative methodologies.⁹⁰ Besides pragmatism as the philosophical underpinning for this type of research, the main

characteristics, assumptions and beliefs of this third paradigm has been defined as follows:

- Quantitative and qualitative methods are used within the same study, sequentially or concurrently
- The design specifies what priorities, if any, are given to the quantitative and qualitative elements of data collection and analysis;
- It explains in detail how the quantitative and qualitative aspects of the research relate to each other, emphasising how the two elements triangulate to produce a superior result than any of the approaches alone.⁹⁰

Researchers use mixed methods for various reasons including to improve the accuracy of their data. It allows the researcher to address issues of bias since the method in itself compensates one method by the strengths and weaknesses of the other method. It is also used as a common sense way of using different methods and kinds of data to build upon initial findings. In this concurrent study, a clear mixed methods approach was in fact used by utilising the questionnaire of the quantitative study to recruit potential participants for inclusion in the subsequent interview study.⁹⁰

3.4 The Current Study

Various facets of pragmatism can explain mixed method research. One of these is Tashakkori's and Creswell's approach that suggest it as a 'third alternative' and that neither of the two paradigm pillars used in isolation would give the ideal findings.⁹⁰ The pragmatic approach belongs to the notion that combines the weaknesses and strengths of the two other methodologies and therefore offers a more complete study than using either of the separate methodologies alone.

The quantitative data was needed to describe how often certain practices occur and therefore the study's aim was to obtain a representative picture of the situation amongst a given population, hence the Explanatory design. In such a case, a probability sample was required to make sure that the study population

has all the important characteristics of the general population from which it is drawn.⁹⁵ This made up the first phase of the study as expected of the Explanatory type where the main focus is in fact the quantitative phase. Here the sample was extracted from the electoral register as the national sampling frame so that the random sample generated would be a true representation of the general population and for sound generalisability of the statistics from such a national survey.

An element of triangulation was adopted in this phase by including a qualitative section that allowed for concurrent extraction of data through a free text section at the end of the questionnaire for further comments. This was useful for the generation of the interview guide for the subsequent interviews conducted in the second phase of the study.

As already mentioned, qualitative methods provide a tool for understanding people's ideas, their experiences and how they interpret the reasons why problems occur, while also getting to know their idea of possible solutions and constraints. The most important element of this method is not the large number of participants but the understanding of in-depth accounts of people's experiences, no matter how frequent these are.^{95,85} The researcher of this study in question was interested in what drives or hinders participants from using the internet for purchasing of medicines online. Therefore to get relevant experiences, informants were selected from among participants from the earlier survey.⁹⁵ In this way the qualitative study was approached sequentially, as typical for the Explanatory design as explained by Creswell. It also served as a method to clarify findings from quantitative study, as well as enhancing the validity of the research.

Since the results of the quantitative study did not reveal a large proportion of the population purchasing medicines online, and that not all those who purchased online showed interest in taking part in the qualitative study, then the number of relevant cases to interview were limited although data saturation was still achieved. The data collected from their in-depth experiences was rich and very valuable to draw conclusions towards the conclusions of the overall project.

3.5 Mixing the two phases of mixed methods design

Just as triangulation is a concept in itself implying the convergence of the methods at some point, and it is written about extensively, other approaches also have explicit terminologies and need to be part of the planning process. The method of integrating the results of the current project was that of 'merging data sets' as described by Creswell.⁹²

As already explained, the aim of the study was to explore the practice and behavior of Maltese residents with respect to acquiring their medicines with a particular focus on internet purchasing of medicines through a mixed methodology. A cross-sectional survey using the general population as the sampling frame was warranted in the quantitative study so as to describe the reality that may exist regarding online medicinal purchasing in Malta. However, such a methodology alone would not grasp the problems and concerns people experience, and therefore in-depth qualitative study was subsequently carried out using a purposive sample from the respondents of the quantitative study. An element of triangulation can be characterised here through the connection created by using interviewees from the respondents that took part in the survey. This would provide further context to the survey findings and explore patients' experiences in accessing medicines in Malta.

Qualitative data was collected through semi-structured interviews in the second phase of this Explanatory study. The data from the studies of these two phases were merged during the interpretation of their analysis that was carried out separately. All the information gathered from both data sets was analysed and further interpreted during the discussion phase. This combination of methods safeguards the validity of the research by integrating the interpretation of results or in analysing the data from both quantitative and qualitative.^{96,97}

The quantitative and qualitative studies are explained in detail in their own right in Chapter 4 and 6 respectively. The combination of their results and findings will be discussed in Chapter 8.

Chapter 4 Quantitative study

In this chapter the method used for the quantitative study is being reported. It explains the various stages that were involved in the set-up of the questionnaire including the pilot. A postal survey was used to gather data from a random sample of the general population. This method was the appropriate design for the exploratory study that was aimed at examining the current status of how people acquire their medicines in Malta.

The results of the study will be presented in Chapter 5 and a discussion in relation to the literature presented in Chapter 2, will be detailed in Chapter 8.

A reflexive comment on the focus of the study

The original aim of the research was to identify what percentage of people use the internet for purchasing their medicines within the Maltese population. The researcher was already aware of anecdotal cases of internet purchasing among colleagues and friends. An earlier study in Malta indicated that the proportion of people who purchase their medicines online may only make up a small percentage of the population. However, the sampling methods used in this study could not give a picture of the population as a whole since recruiting seemed to result in different purposive groups. The method included the use of different target groups such as a social media group, the researcher's personal social media webpage and emailing different contacts. Despite the sampling issues in this local study it concurred with research conducted in other countries that the relative proportions of people purchasing their medicines online compared to brick and mortar pharmacies was low. Furthermore, it was clear from a review of the literature on pharmacy in Malta, that relatively little detail is known about the purchasing patterns in brick and mortar pharmacies. This background was discussed during the transfer interview. Its outcome was instrumental in understanding the extent of what the study needs to cover and reorienting the aim to include a larger vision of medicines' purchasing patterns. Therefore, the area of study was broadened to also gain the views of

participants that do not purchase their medicines online. The questionnaire was re-developed to cover a broader array of questions related to where the public accesses medicines and the reason for their purchasing choices. In addition to broadening the focus of the study, it was clear that the survey had to sample a large enough proportion of the population (i.e. be sufficiently powered) in order to gain the views of the potentially small number of people who might purchase their medicines outside the local market in Malta. These were two challenges that were highlighted through the review of the literature and crucially informed the design and methods in this study.

4.1 Ethics approval

Ethics approval was obtained on 5th December 2016 from the Malta University Research Ethics Committee (UREC) that works in collaboration with the Data Protection Commission. Ethics approval was also obtained on 17th November 2016 from the University of Bath Research Ethics Approval Committee (REACH) with reference EP 16/17 032.

The approval endorsed the process that participants will be informed about the scope of the study through a covering letter (adapted from templates provided by Oxford Brookes University⁹⁸), that participation would be voluntary and for both studies participants will be invited to take part i.e. they are not automatically enrolled. Throughout this process the participant was aware of the identity of the researcher and also had contact information in case of further questions or in the case that they wanted to withdraw their participation.

4.2 Questionnaire design

A questionnaire was adapted from previous studies.^{99,54,82,38} The questions aimed to address the objectives of the study and explore whether the Maltese population purchases medicines from local or foreign markets. The survey questions also explored the types of medicines that were being purchased from online sources, if that was the case.

The main concepts to be measured were listed following a study of the literature about the topic with a focus on the aims and objectives for the current study as described in Chapter 2, (sections 2.15 - 2.17). The themes that emerged from the literature review set the foundation for the concepts that were subsequently operationalised to form the questions of the survey. The concepts included:

- Understanding the characteristics of people that purchase medicines:-
measurement: demographics of age, gender, education, conditions or illness
- Understanding where people purchase medicines from:-
measurement: complete list of sourcing possibilities to choose from
- Focus on consumers' attitudes regarding the concept of internet purchasing of medicines (advantages versus risks):-
measurement: list of reasons found in literature why people purchase online and another list of reasons against internet purchasing
- Types of medicines bought online if any:-
measurement: POM, OTC, naming of medicine
- Types of internet sites used if applicable (regulation):-
measurement: list of options to choose from
- Awareness regarding issues related to quality and counterfeits:-
measurement: 5-point likert scale to assess opinion on quality.

The questionnaire was designed to include both English and Maltese languages. Particular attention was given to the wording of the questions so as to make sure that the participants were at ease with the topic and to encourage honest responses. A qualitative question i.e. a space where the participant can fill in any relevant comments they feel have not been captured by the survey, was included at the end. This made sure that no important issue was left out.

The questionnaire went through several designs and formatting stages with a professional graphics designed company until its finalisation as found in Appendix 2.

4.2.1 Translation

Professor Charles Briffa, Head of department of *Translation, Terminology and Interpreting Studies, Faculty of Arts, University of Malta*, was consulted to check the translated Maltese version of the questionnaire. After it was translated, a back translation process was also carried out to ensure that the concepts that were originally in English were maintained during translation into Maltese.

4.2.2 Pilot test

Piloting was an important stage of the project since,¹⁰⁰ although as stated beforehand the questionnaire was adapted from others, it was essentially re-formulated and therefore needed to be scrutinised to ensure its validity.

The questionnaire was tested among 15 colleagues and friends and was conducted in two stages, a *cognitive testing* stage and a *piloting* stage. The first stage was intended to identify any possible sources of measurement error in the questions, while the second stage focused on the flow of the survey process as a whole.¹⁰¹

Stage 1: cognitive test

Cognitive methods have been developed to explore the 4 stages involved in the 'question-and-answer' process: comprehension, retrieval, judgment and response. Among these methods is *cognitive interviewing* that is ideal for pre-testing survey instruments including questionnaires. Such cognitive testing gives attention to the mental process that goes through respondents' minds while answering the survey questions. Its qualitative nature is complementary to

piloting and allows 'covert' as well as 'overt' problems to come to light.¹⁰¹

The two techniques involved in cognitive testing are:

- a. 'Think aloud interviewing' where the respondent is asked to think-aloud while answering the questionnaire.

The 'think aloud method' has been researched to understand how people 'retrieve personal information to answer survey-type questions by using 'protocols.'¹⁰² These protocols are the verbalisations of the thinking process of respondents during the answering process. From such protocols, researcher such as Fathi, Schooler and Loftus noticed the process subjects go through of correcting original responses and remembering additional information later on.¹⁰²

Such pre-testing cognitive methods are not without limitations and they cannot provide evidence on whether the tested version of the questionnaire is an improvement over the original.¹⁰¹

A further limitation has been identified by critics who noted that such methods *"can discriminate against less articulate respondents, who find it difficult to verbalize their thought processes and may also be less inclined to participate in cognitive testing experiments."*¹⁰¹

- b. 'Probing' where the interviewer asks specific questions (probes) designed to 'elicit how the respondent went about answering the question.'¹⁰¹

Both these techniques were used in this first stage cognitive test as follows.

Five respondents were asked to take part in this cognitive stage and consisted of the 'think-aloud-method' and prompting techniques where the researcher followed the respondent at every question. When the respondent was taking a long time to answer or the question had to be re-read, prompting of other options were suggested so that alternative wording was suggested.

The feedback was inputted into a template with probes that guided the test. The feedback was then analysed and the questionnaire was then amended

accordingly. Amendments included more direct wording to the respondent, consistent wording for instructions, tense, substituting general words that can mean other things to different people eg. 'local' when referring to pharmacy in Malta. Most respondents missed out definitions and instructions such as 'Go to question_'. These were therefore reviewed to ensure there was a flow from question to question.

Stage 2: Pilot test

The second stage involved 10 respondents who were given the amended questionnaire and asked to fill in and include comments about any difficulties they found in the process. The main feedback from these pilots highlighted the need to arrange the sequence of the questions belonging to the first section. The main concern was that since most of the respondents would not purchase prescription-only medicines from the internet, the questionnaire directed them far down to question 7. Suggestions included to have the chronic conditions' list as a section at the end of the questionnaire and have the first four questions asking the reasons why people may need to purchase medicines in the first place, then specifically from internet at question 5. Another important point was to not only ask the respondent whether s/he buys medicines for himself or herself but also for anyone under their care. In this way much more data could be gathered. These suggestions were taken up with the resulting questionnaire that was disseminated as per Appendix 2.

4.3 Types of errors

*"Answers from the respondents are used to make estimates that are correct 'for the population' of which the respondents represent a sample."*¹⁰² The researcher is thus aware of the implication of not having a representative sample of the larger population and therefore needs to be aware of the main sources of error when choosing such a sample.

Sampling error arises from the very act of sampling and refers to *"the luck of the*

draw” that might have given a different sample and therefore could slightly lead to different estimates.¹⁰²

The error is better explained as “*the difference between a sample estimate and the true population value that is due to change variation of multiple samples.*”¹⁰³

The methodology used in the study required the use of a large sample, being one of the ways to minimise random sampling error.

The difference between the sample and true population values is referred to as the systematic error and is due to other factors (other than random error)¹⁰³ and can be divided into:

- Population specification bias where the population is not adequate for the research questions¹⁰³
- Coverage bias (over, under or multiple-coverage)¹⁰³
- Selection bias

Types of errors are various including non-sampling errors that may cancel out as the sample size increases and others such as memory errors and systematic coding errors, that cannot be decreased with sample size increase.¹⁰²

Furthermore non-sampling errors can be nonresponse errors such as people who do not answer specific questions, and response or ‘measurement’ errors where answers are wrong in some way.¹⁰² There is also bias in the data analysis that could be caused by data processing errors or by data analysis errors.¹⁰³

Biases need to be addressed in accordance with the concept of quality markers of quantitative research. These include internal and external validity, reliability and objectivity. These criteria support the ontological and epistemological grounds of quantitative research that assumes the “independent existence of reality that can be empirically measured.” To ensure such quality criteria, sampling needs to be “probabilistic and random in order to produce representative, generalisable, reliable and objective results.”¹⁰⁴

4.4 Participants

It is estimated that Malta's adult population is approximately 350,000 as per Malta Demographics profile 2016.¹⁰⁵ This population is being studied through a representative sample with an ideal estimate of 600 respondents. This number, calculated through online random sample size calculators,^{106,107} was estimated to be the ideal sample size to achieve a confidence interval of 4 and confidence level of 95%. However when considering the general response rate from other studies conducted in Malta, a response rate of 25-30% was expected. With the prediction of such a response rate, the questionnaire had to be distributed among approximately 2000 participants.^{108,106,107} Inclusion criteria included any adult person (18 years and over) and resident in Malta. Exclusion criteria included individuals under 18 years of age.

The sample needed to include participants across a vast range of conditions and across different economic status, so as to be representative of the general population.¹⁰⁹ This random sample of participants to survey, was selected from the electoral register. This register lists names and addresses of those people aged above 18, who are registered to vote in the general election. The list is published twice yearly, in April and October and is presently only found as a paper copy in 13 volumes according to the electoral districts in Malta. This format involved physical volumes in hard copies in which residents were listed according to the location they lived in. Moreover, these lists were not numbered and therefore the method of generating random numbers and selecting the corresponding entry was not possible. The electoral commission was contacted to attempt to obtain the soft copy of this list. However this request was refused with the alternative option of being offered the random sample itself. This sample was generated from the electoral commission's database, a tenth generation Oracle Relational Database Management System which contains a number of in-built packages and procedures (function). The random sample of 1996 persons registered as voters in the October 2016 General Elections Register was retrieved using the in-built random number generator package called 'dbms_random'.¹¹⁰ Random number generators generates pseudo-random numbers, the technical term for these type of random numbers

generated by such packages. Once these numbers satisfy the condition of being “independent and identically distributed” (“iid”), then the numbers are truly random. Oracle has been claimed to create a good random generator that is a fast, long enough cycle and ‘iid’.¹¹⁰ Furthermore, the query used to select the sample creates different data each time it is run and therefore ensures that random numbers are created each time.

4.5 Questionnaire dissemination

A covering letter incorporated within the questionnaire explained the scope of this project. It guaranteed that the responses received would be kept anonymous. The questionnaires were sent on the 1st March 2017 with a deadline of 31st March 2017. March was chosen as being the ideal time in the year to avoid vacation periods when people would be away on holidays. They were posted with a separate sheet on which the respondent could leave their contact details to take part in a draw towards an €80 voucher incentive. Participants were also asked to leave a contact number on this same separate sheet if they were interested to take part in the qualitative study. A personalised (hand-written) ‘post-it’ was attached to each questionnaire with the message:

*Your response is greatly appreciated.
Thank you in advance
Corinne*

The questionnaires together with a pre-paid self-addressed envelope were sent out simultaneously from the postal head office to ensure that they were all sent in unison and from the same source.

4.6 Measures taken to increase response rate

Besides the formulation of the actual questionnaire as flowing and easy to read as possible, research shows that "questionnaires originating from universities were more likely to be returned than were questionnaires from other sources."¹¹¹ The questionnaire was designed with both University of Bath and

University of Malta logos with the purpose of ensuring the participants that the scope of the study was reliable and trustworthy.

The envelopes were sent specifically to participants in contrast to 'the resident' at a particular address. This was a measure to encourage the feeling of a personal salutation that have been known to increase the response rate.¹¹² In this survey, personal salutations and addresses were printed on labels that were fixed on the envelope. While hand-written salutations would have been another measure to increase response rate, this was impossible since the sample of 2000 was too large. However other measures such as planning the appropriate time of the year¹¹² ie. February to March, the offer of an incentive¹¹² and using post-it notes to give that personal touch were adopted.

The use of a "Post-it note" has been researched and claims exist that it may have an influential effect on drawing attention to the material in question.¹¹³ Kanner (1989) found that the eye is drawn to yellow (same as the Post-it) in a faster manner than many other colors. Therefore placing a brightly colored Post-it note on a survey packet, for example, may elicit a greater attention to the material, especially when contrasted with other items that are often found in one's mailbox or desk. That is, the Post-it may suggest that the packet is important or requires attention and therefore it's more likely that consideration will be given to it.¹¹³ Some studies examined the influence of attaching Post-it® note to a survey packet on the likelihood of completing the survey. The researchers concluded that the note implies that a plea for a personal favour is being requested and that might lead to more compliance to respond.¹¹³

Participants received the questionnaire with a hand-written neon green note fixed to the front. A self-addressed envelope in which to return the questionnaire was also included.

The results of the responses from the respondents were analysed through descriptive statistics and Chi-square tests done to establish associations between variables. These are reported in Chapter 5.

Chapter 5 Results of postal survey

5.1 Response Rate

A total of 460 questionnaires were returned of which 16 were returned empty due to either a wrong address, the person having moved abroad, or the person having passed away. The 444 completed questionnaires represent a response rate of 22.4% of the 1980 that were delivered. As indicated in Chapter 4 the sample size was calculated ($N=600$) to achieve a confidence interval of 4 and a confidence level of 95%. Although the number of respondents was less than this, a higher than expected response rate was still achieved ($N=384$) for a confidence interval of 5 and a 95% confidence level.

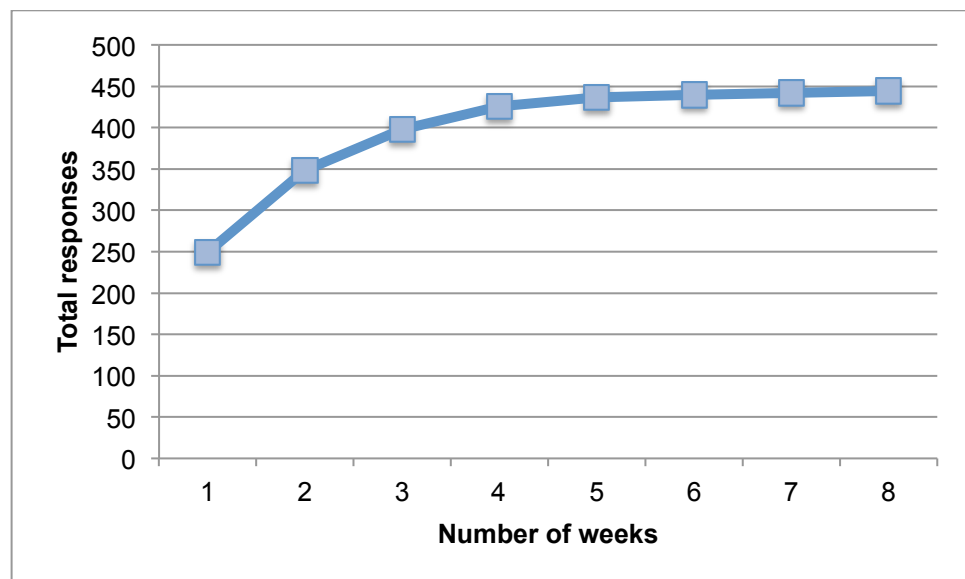


Figure 5.1. Number of responses received over an 8-week period

Data was inputted into Excel and exported into SPSS version 24. Data was verified by the researcher by checking the data inputted against about 40% of the questionnaires. Then descriptive statistics were generated.

5.2 Demographics

Table 5.1 describes the demographics of the sample and compares it with that of the general adult Maltese population.

Table 5.1. Demographics of respondents (N=444) compared to general population

Demographic type	Sample (N=444)	Sample frequency as %	Maltese Population frequency as %
			Over 18 year olds as on December 2016 ¹⁰³
Gender			
Male	172	38.7	49.87 (181,811)
Female	264	59.5	50.13 (182,733)
Missing data	8	1.8	
Age			
18-24	29	6.5	10.6
25-34	63	14.2	18.3
35-44	59	13.3	16.8
45-54	74	16.7	14.5
55-64	100	22.5	16.3
65-74	79	17.8	14.4
75-84	30	6.8	6.9
85-91	5	1.1	2.3
Missing data	5	1.1	
Region			Data of 2015 ⁶⁸
Southern Harbour	77	17.3	18.4
Northern Harbour	123	27.7	29.5
South Eastern	67	15.1	15.5
Western	72	16.2	13.7
Northern	71	16.0	15.5
Gozo & Comino	24	5.4	7.29
Missing data	10	2.2	
Education level			
Primary	66	14.9	17.9
Secondary	181	40.8	39.2
Post secondary/Tertiary and higher	190	42.8	41.8
Missing data	7	1.6	

A chi-square goodness of fit test was conducted to test whether the observed proportions of gender and age in the sample differ significantly from the general population. A significant difference was present in both the gender, $\chi^2 (1) = 18.938, p < 0.001$, and the age groups, $\chi^2 (7) = 32.373, p < 0.001$. The majority of the respondents were female (59.5%, $n=264$) and this trend was consistent within each age group. While the highest response rate was in the age group 55-64 years ($n=100$), the majority of respondents were under the age of 55 ($n=225$). The mean age of respondents was 51.7 years (SD ± 17) while the median was 54. The younger age group (18-24 years old) was under-represented in the sample while the 55-64 age was over represented when compared to the population as can be clearly seen in Figure 5.2.

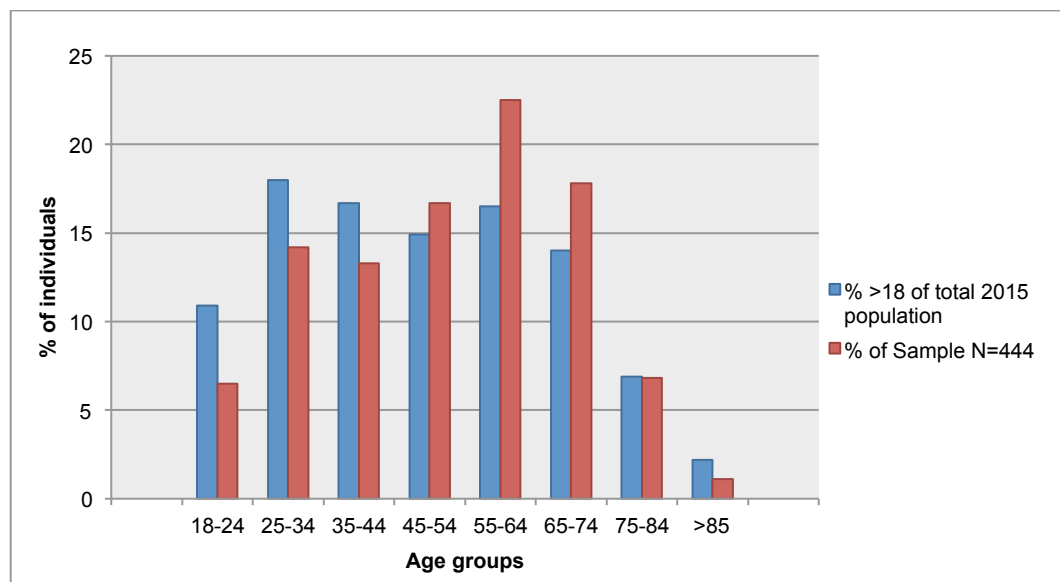


Figure 5.2. Age Group Distribution of Sample compared to the General Population

The population in Malta is reported to be classified across six main regions according to differing average incomes, educational levels and occupational distributions.⁴ As can be seen in Table 5.1, the spread of the respondents across the six main regions varies minimally from the general population distribution. The largest group in both the sample and the general population reside in the Northern Harbour region ($n=123$; 27.8%).

Most respondents had a secondary educational level (n=181; 40.8%) or higher (n=190; 42.8%). These percentages compare closely to the population at this same education level as can be seen in Table 5.1. It shows that the percentage of secondary and higher educated people within the sample is about 83% (40.8% + 42.8%) compared to 81% of the population with the same education.

5.3 Employment

Table 5.2. Employment status of respondents

	Frequency (n=427)	Percent
part time	24	5.4
full time	190	42.8
unemployed	87	19.6
retired	90	20.3
student	13	2.9
self-employed	12	2.7
full time housewife	3	.7
part/full time & student	5	1.1
full & part time	3	.7
Total	427	96.2

Missing data n=17

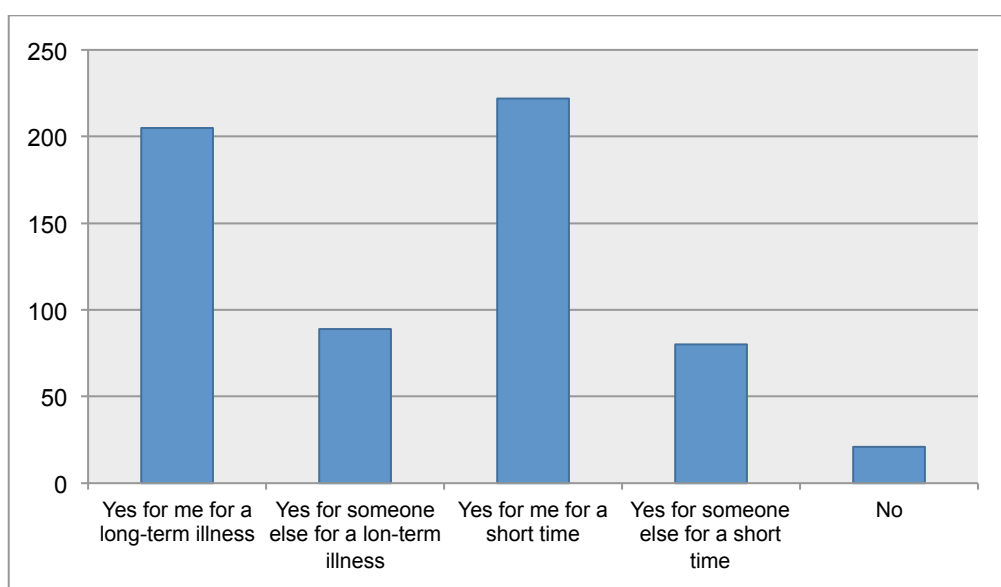
Table 5.2 shows that the majority of respondents were full-time workers.

5.4 Presentation of results of survey

The results of the quantitative study will be presented through descriptive statistics. Several questions had options for free text where respondents were asked to specify further. These comments were analysed alongside the descriptive statistics and are described after each question's statistical analysis within this chapter.

5.5 Experience with use of prescription-only medicines (POM)

Two hundred and twenty-two respondents (n=222; 50% of total respondents) stated that they had experienced using prescription-only medicines (POM) for themselves for short-term use followed by n=206 (46%) respondents for long term. Figure 5.3 shows the frequencies for each response while Table 5.3 represents the frequencies within multiple response sets since respondents were given a number of response options as relevant to them.



Missing data n=7

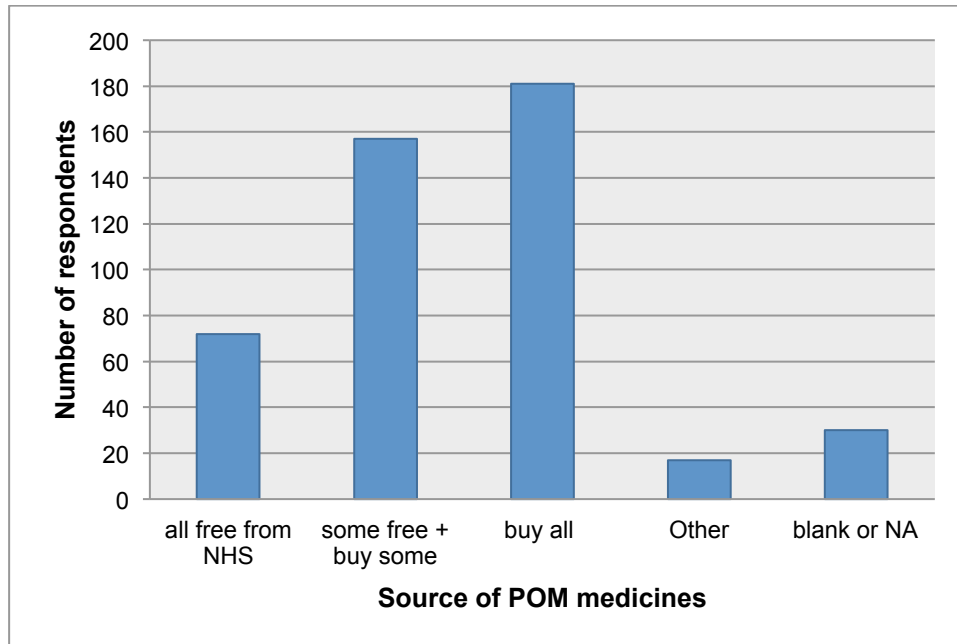
Figure 5.3. Frequencies for responses related to short term versus long-term use of POMs

Table 5.3. Frequencies of multiple responses related to short term and long term use of POMs

Response option	Long term	Short term	Long & Short term
Yes, for self	206 (46%)	222 (50%)	
Yes, for others	89 (20%)	80 (18%)	
Yes, for both self & others	50 (11%)	65 (15%)	
Yes, for either self, others or both	245 (55%)	237 (53%)	415 (93%)
No use of POM at all	22 (5%)		

Missing data n=7

Figure 5.4 shows that 40.8% of respondents “bought all of their required POMs” when they needed to take them, followed by 35.4% who said they get “some from government health services and also buy some”. Some respondents gave multiple responses.



Missing data n=27

Figure 5.4. Private or public supply of prescription-only medicines (POM)

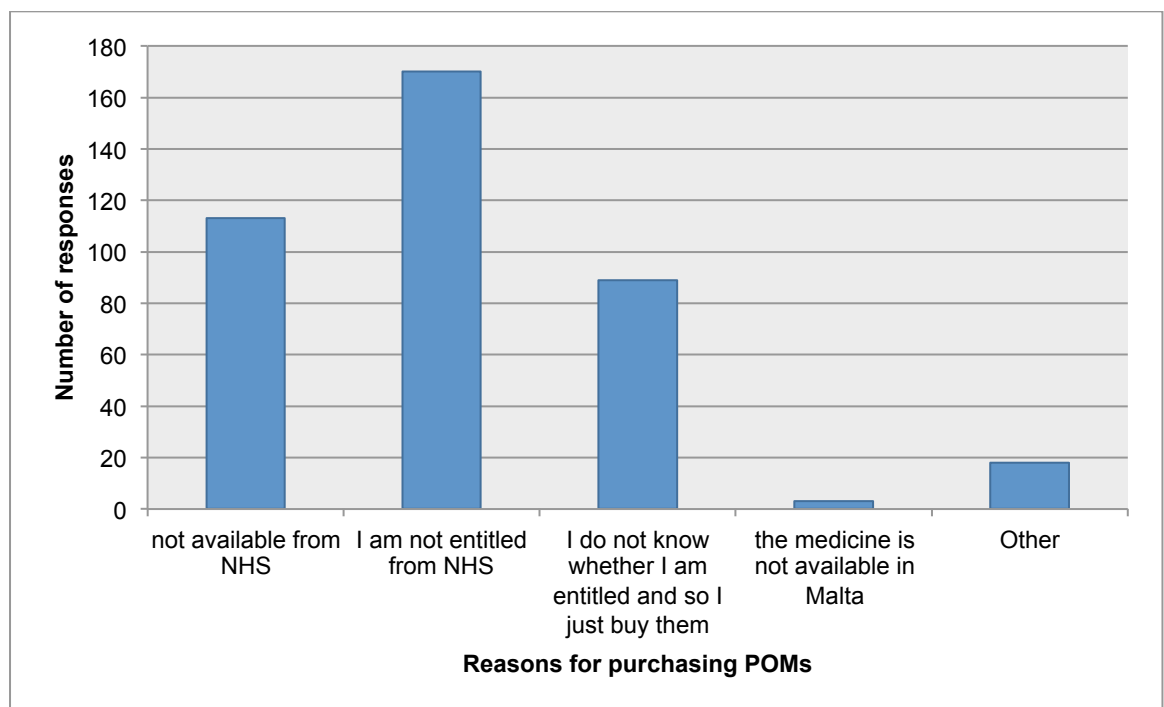
5.6 Type of medicines bought privately

The ‘other’ in Figure 5.4 includes both respondents that ticked it as an option as well as those that just added new comments. These comments given in the free text to question 2 are explained here below. Some explained where they buy their medicines from and they gave examples of what type of medicines they would need to buy. These mainly included the following:

- Deanxit® (n=2) (flupentixol with melitracen, indicated for a number of psychological conditions including, depression)
- Levothyroxine (Eltroxin®) (n=3) (used to treat an underactive thyroid)
- Galvus® (vildagliptin) (n=1) (used to treat diabetes mellitus)
- Tablets for prostate (name not specified)
- Xanax® (alprazolam used for anxiety and panic disorders) (n=1)

- More general products eg. creams, antibiotics, cold and flu remedies (n=4)
- Paroxetine (antidepressant) – patient is entitled for free paroxetine however recently the brand has been changed and since the tablet has no coating, it dissolves in his mouth and therefore is now buying them (translated from Maltese) (n=1)
- One respondent also indicated purchasing from Sicily.

The majority who buy POMs according to responses to question 3, as seen in Fig 5.5, reported that they do so because they are not entitled to get them for free (n=170; 38% of total respondents) followed by 113 (25%) responses claiming that the medicines are not available from the government national health service (NHS). Eltroxin® (levothyroxine tablets) (n=2) and Vitamin D3 (n=1) were examples of medicines not available on the NHS as highlighted in more detail below.



Missing data n=76

Figure 5.5. Reasons for buying POMs

Eighty-nine (n=89) responded that they do not know whether they are entitled

and so they just buy the medicines. One of these respondents explained that the medication is cheap and so just buys them without knowledge of possible entitlement.

Some respondents (n=18) gave 'other' reasons for purchasing POM (Fig 5.5). These included:

- Medicines from NHS results in significant side effects (n=1)
- Ventolin[®] (Salbutamol used to manage respiratory symptoms in asthma and chronic obstructive pulmonary disease) from NHS causes palpitations (n=1) (See Chapter 7 for qualitative interviews related to this)
- Easiest and quickest option (n=1)
- Cheap medication (n=1)
- Easier to buy, POYC is too complicated (n=1)
- Never bothered to get them for free (n=1)
- When out of stock in pharmacy (n=1)
- Medicine is not given for free or not available on NHS eg. birth control tablets
- (n=1), antibiotics (n=2), Vitamin D3 (n=1), levothyroxine (n=2 other than those
- Mentioned earlier in Question 2)
- Buys when sick other than for the chronic condition (n=6)
- What doctor prescribes for short term (n=2)
- Confidentiality reasons (n=1)

A summary of feedback given in Q2 & Q3 can draw together the reasons given by respondents for buying medicines and the types they purchase:

1. Medicines not available on the NHS formulary eg. Deanxit[®] (n=2); Levothyroxine (n=5) although option "not entitled" was also ticked; Xanax[®] (alprazolam n=1); Galvus[®] (vildagliptin) (n=1)
2. Medicines needed for short periods eg. creams, cough syrup, antibiotics
3. Problems with brands of the medicines on the formulary eg. paroxetine, Ventolin[®] (salbutamol)

5.7 Consumer sourcing of medicines

When asked where POMs are bought from, the majority of respondents (n=388; 87%) indicated purchasing medicines from a private or hospital pharmacy in Malta as seen in Table 5.4. Three of these also purchase or have purchased medicines from pharmacies while abroad as follows:

- “Couple of times” from a pharmacy abroad (n=1)
- Pharmacy in “Sicily as they are much cheaper” (n=1)
- “I used to buy Zyrtec® or tablets containing cetirizina online but it is no longer possible due to some new local restrictions. Therefore when possible I buy them abroad. Reason: in Malta they cost €11, abroad (in EU) around €3”. Respondent had subsequently responded to the following questions and indicated looking for logos for reliable sites and had also indicated that he encountered no problems with the online stock. (Cetirizine is an antihistamine and is presently classified as an OTC in Malta).

Table 5.4. Location for purchase of POM medicines

	Frequency (n=444)
From a private &/or hospital pharmacy in Malta	388
Private pharmacy locally as well as while abroad	3 (included in 388 above)
From a pharmacy abroad either directly or through friends or relatives	1
Missing or not NA	55
Total	444

Besides the respondent who claimed buying cetirizine from the Internet, another claimed that he bought Cialis® (tadalafil used for erectile dysfunction) occasionally online without a prescription. He further indicated having purchased between once to twice a year and searched for a ‘professional-looking site’. The reason for this online purchase was that it is ‘cheaper than

locally' and the doctor was aware of this practice. However he reported that he had 'side effects of shaking' with this medicine bought online. He further explained in the free text that although the medicine he bought online was good, after a few months his hand started trembling and confirmed with the patient information leaflet that it is a known side effect. So he decided to stop them and bought from the Maltese market instead and the side effects did not come back, (original response was in Maltese and therefore could not quote verbatim).

5.8 Purchasing of over-the-counter (OTC) medicines online

Fifty-one (n=51) respondents answered that they purchase or have purchased OTCs from the Internet for themselves or a family member (refer to Appendix 4 for details). Most of these gave details of products as follows:

- Supplements including combination with vitamins eg. glucosamine and chondroitin, lecithin, L-Theanine, etc. (n=13)
- Lactase tablets (n=1)
- Minoxidil (n=1) (commonly used for treatment of alopecia)
- Herbal preparations eg. valeriana products, stinging nettle, etc. (n=3)
- Vitamins eg. multivitamins for kids, vitamin B complex, etc. (n=6)
- Nurofen[®] migraine, Syndol[®] (n=2)
- Paracetamol products (n=12)
- Other (n=4)
- No product specified (n=6)

However, only 19 of these participants gave reasons for purchasing online as seen in Appendix 4 Table 1 and 2. The rest gave conflicting information and most (n=32) did not answer the follow-on questions to explain their purchase online and therefore it was not clear whether they actually did purchase anything online or not. Details of their responses can be seen in Appendix 4 Table 3.

Table 5.5 gives a simplified explanation of Appendix 4.

Table 5.5. Breakdown of these 51 respondents according to further responses

n=19 answered further questions related to their online purchase	n=32 did not answer the relevant questions that confirm their online purchase
13 answered question that gave reasons for online purchase as expected (App 4 Table 1)	15 further responses give conflicting details about whether they actually purchased online or not (App 4 Table 3 Group A)
6 answered question that gave reasons for and against online purchase (App 4 Table 2)	17 gave further responses indicating that probably no online purchase seemed to have taken place (App 4 Table 3 Group B)

Points of interest however still arise from the 32 respondents that ticked reasons for not purchasing medicines online. These included:

- I do not buy online, but might consider it in the future (n=2)
- I do not think it is safe/ I do not want to risk buying medicines from the internet which are POM in Malta (n=16)
- I do not know how to go about it/ I do not know that I can buy medicines over the internet (n=8)

The responses from the 19 participants who gave reasons for purchasing online are described in Figure 5.6, (respondents were allowed multiple answers).

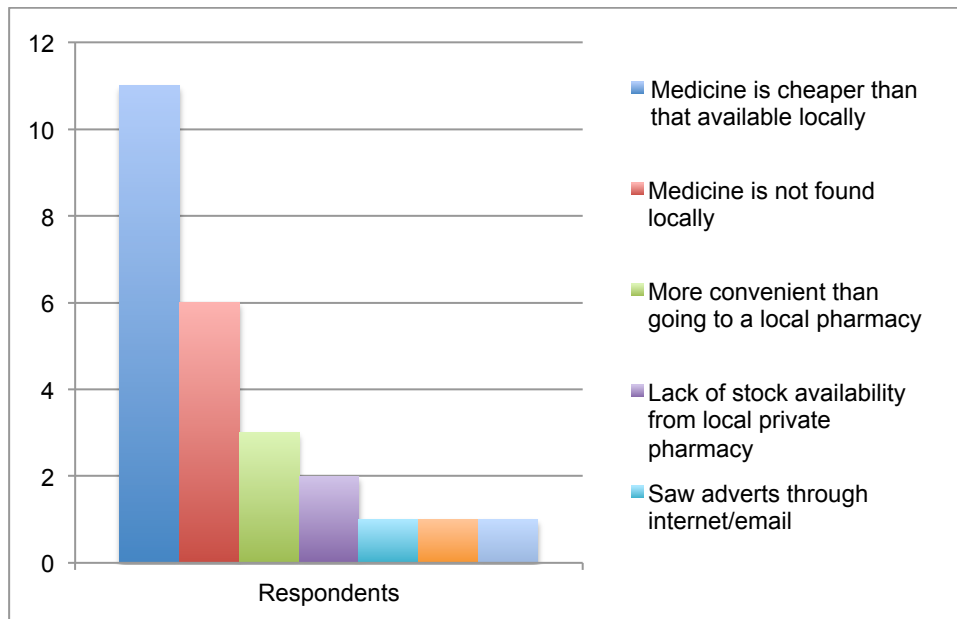


Figure 5.6. Reasons for purchasing OTC medicines online

As already noted, of these 19 respondents, 13 answered the relevant question (Q12) indicating reasons for purchasing online while 6 answered both this question as well as the question 13 indicating reasons for not purchasing medicines online. These respondents answered question 11 which asked how they chose the Internet site to purchase from. Their responses may be seen in Figure 5.7.

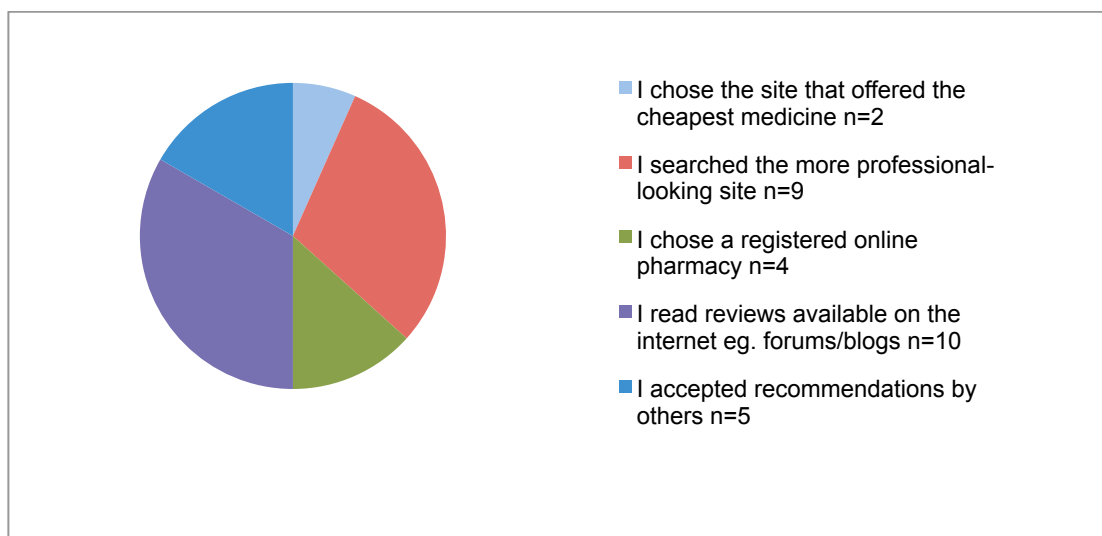


Figure 5.7. How internet sites were chosen by respondents

Sixteen of these 19 participants reported not having any problems with internet purchasing. Three reported having problems as follows:

- getting hyper with purchase of PABA (para aminobenzoic acid used for skin conditions) (n=1) (translated from Maltese)
- 'some site stopped delivering to Malta for various reasons' (n=1)
- 'one scam company with direct debit, unable to cancel' (n=1)

5.9 Reasons for not purchasing any type of medicine from the Internet

Eighty-nine percent (89%; n=393) of respondents ticked one or more reasons for not purchasing medicines online in question 13 of the questionnaire. The graph below (Figure 5.8) illustrates the frequency of respondents against the listed possible reasons for not purchasing medicines online. Respondents were given the option to respond with more than one answer to this question.

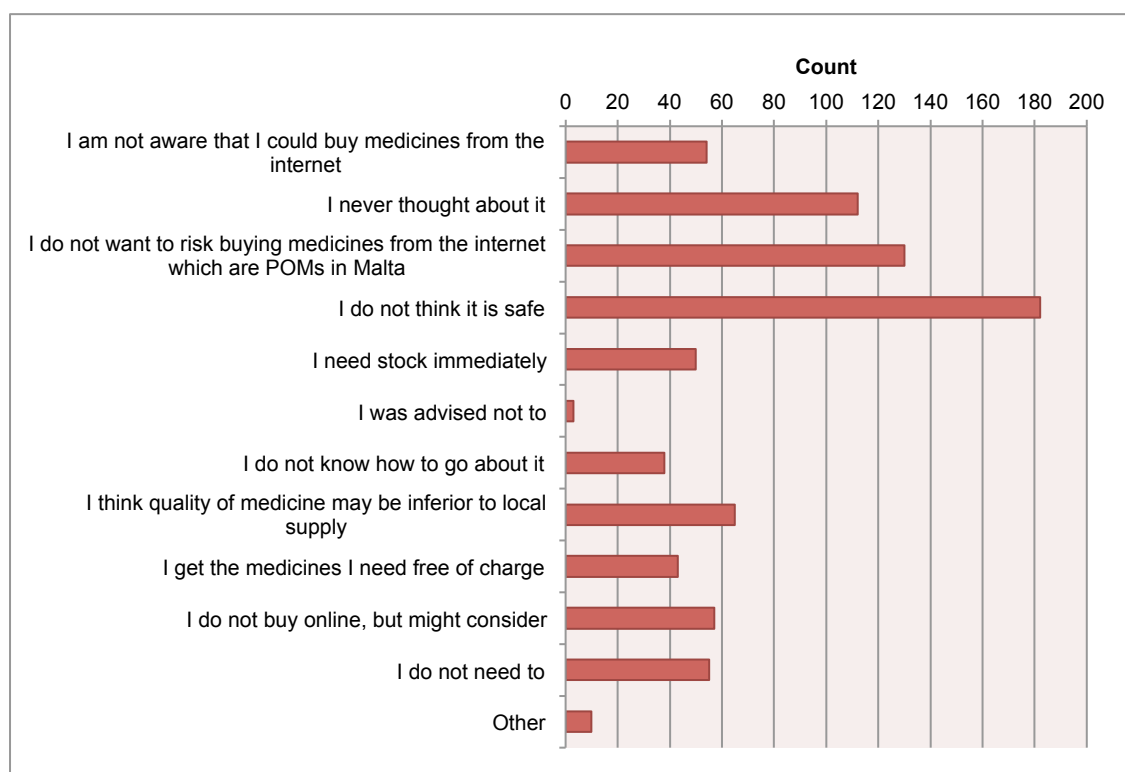


Figure 5.8. Reasons for not purchasing medicines online

A Chi-square test was done to establish associations between demographics and the three most frequent responses given for not purchasing medicines online as seen in Table 5.6.

Table 5.6 Associations between demographics and the most common reasons for not purchasing medicines online

	I never thought about it	I do not want to risk buying medicines from the internet which are POMs in Malta	I do not think it is safe
Age	Counts (% within age group)		
18-34years	36 (42%)	28 (33%)	48 (56%)
35-44 years	11 (21%)	17 (32%)	20 (38%)
45-54 years	23 (37%)	20 (32%)	28 (44%)
55-64 years	13 (14%)	35 (39%)	48 (53%)
>65 years	28 (28%)	30 (30%)	37 (37%)
Association with age (df 4)	Chi-square 20.208 $p = < 0.001$	Chi-square 1.704 $p = .790$	Chi-square 9.780 $p = .044$
Gender	Counts (% within gender)		
Male	36 (24%)	56 (37%)	73 (48%)
Female	75 (31%)	73 (30%)	108 (45%)
Association with gender (df 1)	Chi-square 2.503 $p = .114$	Chi-square 1.865 $p = .172$	Chi-square 0.417 $p = .518$
Educational level	Counts (% within educational levels)		
Primary	19 (32%)	18 (31%)	15 (25%)
Secondary	38 (24%)	60 (38%)	72 (46%)
Post secondary/tertiary/postgrad	54 (31%)	52 (30%)	93 (53%)
Association with educational level (df 2)	Chi-square 2.484 $p = .289$	Chi-square 2.677 $p = .262$	Chi-square 13.952 $p = .001$

Missing included not applicable or omitted, n=51

A significant association was found between age and participants' response "I never thought about it", $\chi^2 (4) = 20.208, p < .001$. This significant result indicates that the age of participants was related to whether they had thought about purchasing medicines online before or not. Those aged 18-34years (42%) and 45-54years (37%) were the respondents who were most likely to report they had "never thought about" purchasing medicines online. As there are more than 2 groups, ORs could not be calculated. However, the adjusted standardised residuals were significant for the 18-34year ($z = \pm 3.2$) and 55-64year ($z = \pm 3.4$) age groups. These show that more respondents than expected said that they had never thought about using internet to buy medicines.

A significant association was found between age and the response "I do not think it was safe" to purchase medicines online, $\chi^2 (4) = 9.780, p = .044$. The youngest age group of 18-34years (56%) followed by those aged 55-64 (53%) were the age groups who most commonly chose this. The adjusted standardised residuals were significant for the 18-34year ($z = \pm 2.1$) and >65years ($z = \pm 2.1$) age groups. These show that more respondents within these age groups than expected said that they do not think it is safe to buy medicines online.

Respondents' level of education also was significantly related to whether they reported that they "do not think it is safe" to purchase medicines online, $\chi^2 (2) = 13.952, p = .001$. Those with higher levels of education were more likely to report that purchasing medicines online is not safe. Fifty-three (53%) of respondents within the post secondary/tertiary group specifically chose the option that they "do not think it is safe" to purchase medicines online as being the reason for them not doing so. This percentage was followed by 46% within the secondary level education group and lastly 25% within the primary level. The z score (± 3.4) (adjusted standardised residual) for the primary education group was significant and also that of the post secondary/tertiary/postgrad ($z = \pm 2.6$) indicating that more than expected respondents within these two extreme educational levels answered that they do not think it is safe to buy medicines online.

To better understand the main reasons for not purchasing online, all the reasons were grouped into the following 5 categories:

1. Obscurity ie. respondents were not aware it is possible to purchase online, never thought about it or don't know how (n=204)
2. Risk, safety and quality issues (n=377)
3. No need to, since it is possible that respondents get medicines for free from government (n=98)
4. Timely manner ie. Patients would need stock immediately (n=50)
5. Might consider it in the future (n=57)

These categories are shown in Figure 5.9

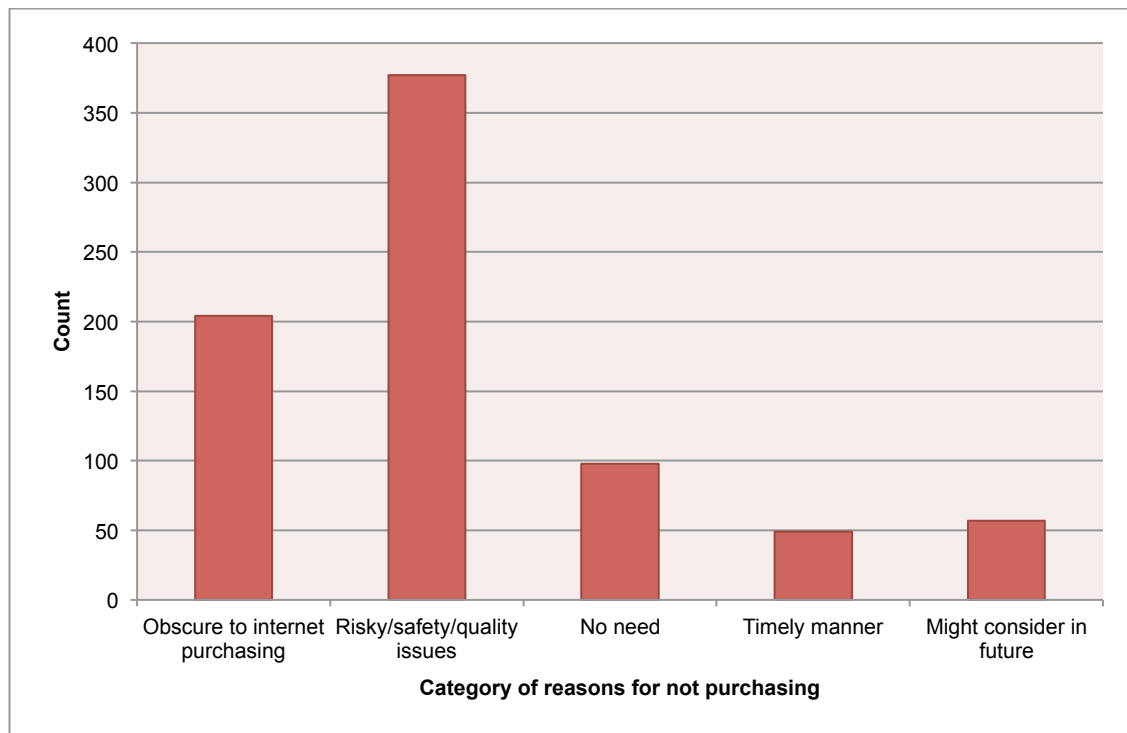


Figure 5.9. Main categories of reasons for not purchasing online

- “Other” reasons for not purchasing online as indicated in Figure 5.8, included
- Not having a computer or internet. This was commonly mentioned (7 cases)
- If one can buy locally, then they don’t buy from internet
- “to be sure that the medicine is the one ordered by the doctor”
- “might not be genuine”
- “don’t trust online source”

5.10 Perceived problems associated with buying online

All respondents were invited to complete questions 17 to 21 which asked them about a range of issues associated with purchasing medicines online. The responses for question 17a are shown in Figure 5.10. As can be seen, 41.4% (n= 184) of all respondents (N=444) answered that they think it would be “very likely” (n=73) or “likely” (n=111) to come across a problem with medicines bought over the Internet. A very large number of respondents (n=163; 37%) left this question out as represented by the ‘blanks’ in Figure 5.10.

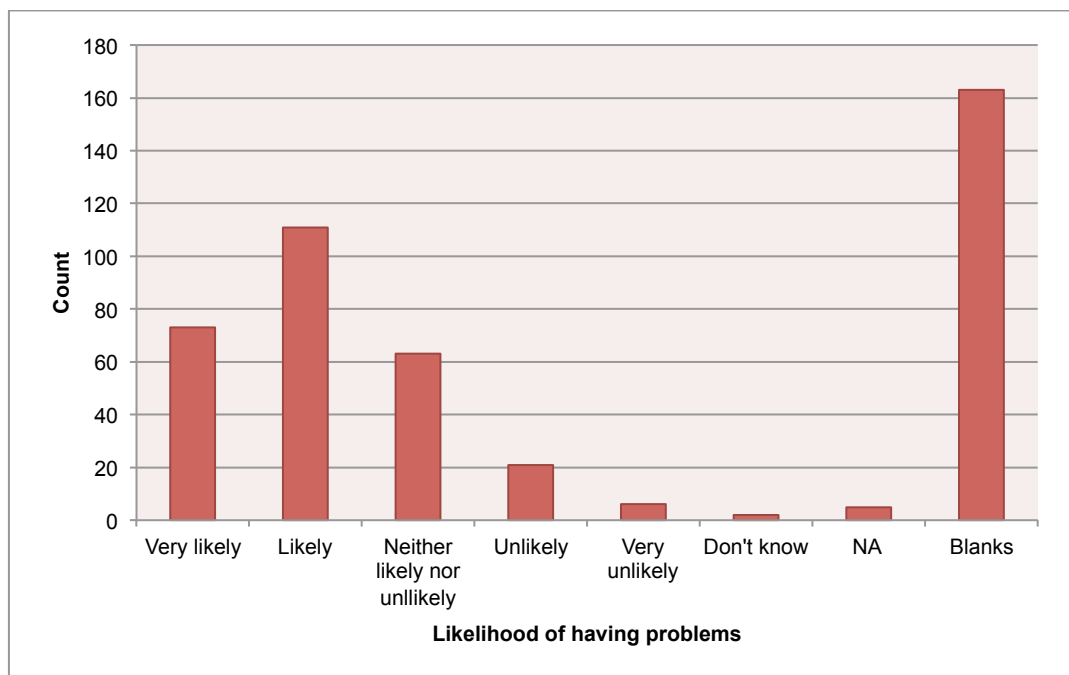


Figure 5.10. How likely do you think it is that you can come across a problem with medicines bought over the Internet?

Table 5.7. Associations between demographics and the opinion about likeliness of having problems when purchasing medicines online (Q17a)

	Very likely/ likely	Undecided	Very unlikely / unlikely
Age	Counts (% within age group)		
18-34years	48 (66%)	17 (23%)	8 (11%)
35-44 years	28 (60%)	12 (26%)	7 (15%)
45-54 years	33 (72%)	8 (17%)	5 (11%)
55-64 years	40 (74%)	10 (19%)	4 (7%)
>65 years	35 (64%)	17 (31%)	3 (6%)
Total	184	64	27
Missing n=169			
Association with age	Chi-square 6.513 (8) <i>p</i> value .590		
Gender	Counts (% within gender group)		
Male	71 (65%)	27 (25%)	11 (10%)
Female	112 (68%)	37 (22%)	16 (10%)
Total	183	64	27
Missing n=170			
Association with gender	Chi-square .239 (2) <i>p</i> = .887		
Educational level	Counts (% within educational levels)		
Primary	19 (63%)	11 (37%)	0
Secondary	76 (78%)	16 (17%)	5 (5%)
Post secondary/tertiary/post grad	87 (60%)	37 (26%)	21 (15%)
Total	182	64	26
Missing n=172			
Association with educational level	Chi-square 10.616 (2) <i>p</i> = .005	* primary and secondary groups were collapsed since primary had cells less than 5.	

Chi-square tests were done to analyse any associations between demographics, (age, gender and education) and what individuals think of the likeliness of coming across a problem with a medicine bought over the Internet.

The percentage of respondents with the highest educational level (post secondary/tertiary group) who thought it 'unlikely' to come across a problem was three times the percentage of respondents with secondary education, while

no one in the primary group thought it 'unlikely.' On the other hand 78% within the secondary group thought it 'likely' while 60% within the post secondary/tertiary group thought it 'likely'.

Since there were no participants at the primary educational level, who thought it 'unlikely', the educational level groups were collapsed into two groups for statistical test purposes; one included both primary and secondary education and the other included post secondary and higher. The analysis revealed a significant effect between educational level and whether respondents thought it both 'likely' or 'unlikely' to come across a problem when purchasing a medicine online $\chi^2 (2) = 10.616, p .005$.

Both collapsed educational level groups had significant z scores. Lower educational level (primary & secondary) had a score of 2.6 and therefore more than expected respondents answered that it is 'likely' to come across a problem. On the other hand -2.6 was the score for the higher education level and therefore those thinking it is 'likely' to come across a problem in this group were less than expected. The other way round was true for those who thought it was 'unlikely'; -3 score for the lower educational level meaning less respondents in this group than expected thought it was 'unlikely' to come across a problem while a score of 3 for the higher educational group meant that more respondents in this group than expected thought it 'unlikely' to come across a problem with online purchasing.

Respondents (6%) who answered that they would be "unlikely" or "very unlikely" to come across a problem, were asked to expand on their response as to why they think this is so. The results are shown in Figure 5.11

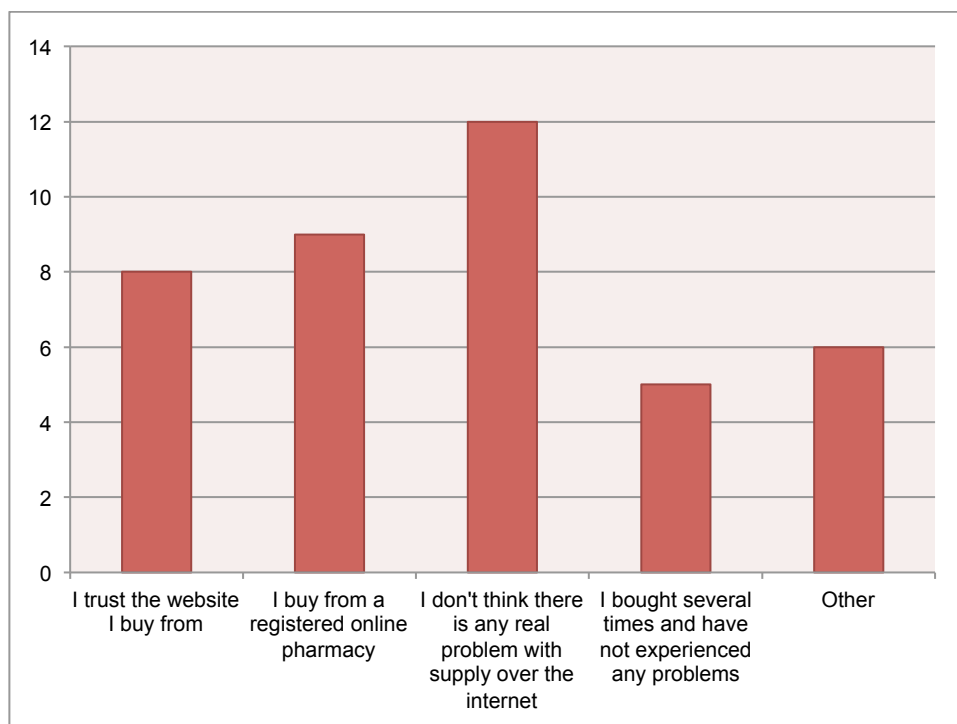


Figure 5.11. Respondents who answered 'unlikely' or 'very unlikely' to come across a problem

Those that chose “I trust the website I buy from” said they use the internet to buy OTCs such as Nurofen® Migraine, Flexese® plus, vitamin supplements. All of these had indicated buying POMs from a private pharmacy in question 5. Another participant who also answered “I trust the website I buy from” was the Cialis® case that also indicated that he buys POMs from a private pharmacy in Question 5. Here there is an explanation because while this may be POM in Malta, several websites may not consider it so.

Those that chose “I buy from a registered online pharmacy” are not clear as to whether they actually buy any medicines online since there were no answers indicating purchasing POMs or OTCs online. Only two participants clearly answered the relevant questions (9-12), one of which reported buying vitamin B complex while the other indicated buying OTC online but did not indicate what type.

Five respondents answered the option “I bought several times and have not experienced any problems”. Four of them claimed to having bought tomato natural dietary supplement, ginseng, as well as other supplements but claimed

to buy POMs from private pharmacy in question 5. The 5th one used to buy Zyrtec® /cetirizine tablets online but due to recent local restrictions cannot anymore and therefore gets them directly from abroad when possible since cost in Malta is more than triple the price in another EU country.

Six chose 'other' in Figure 5.11 of which responses included that if they had to buy from the Internet, they would choose a trusted registered pharmacy/source.

5.11 Opinion of quality of medicines bought over the Internet

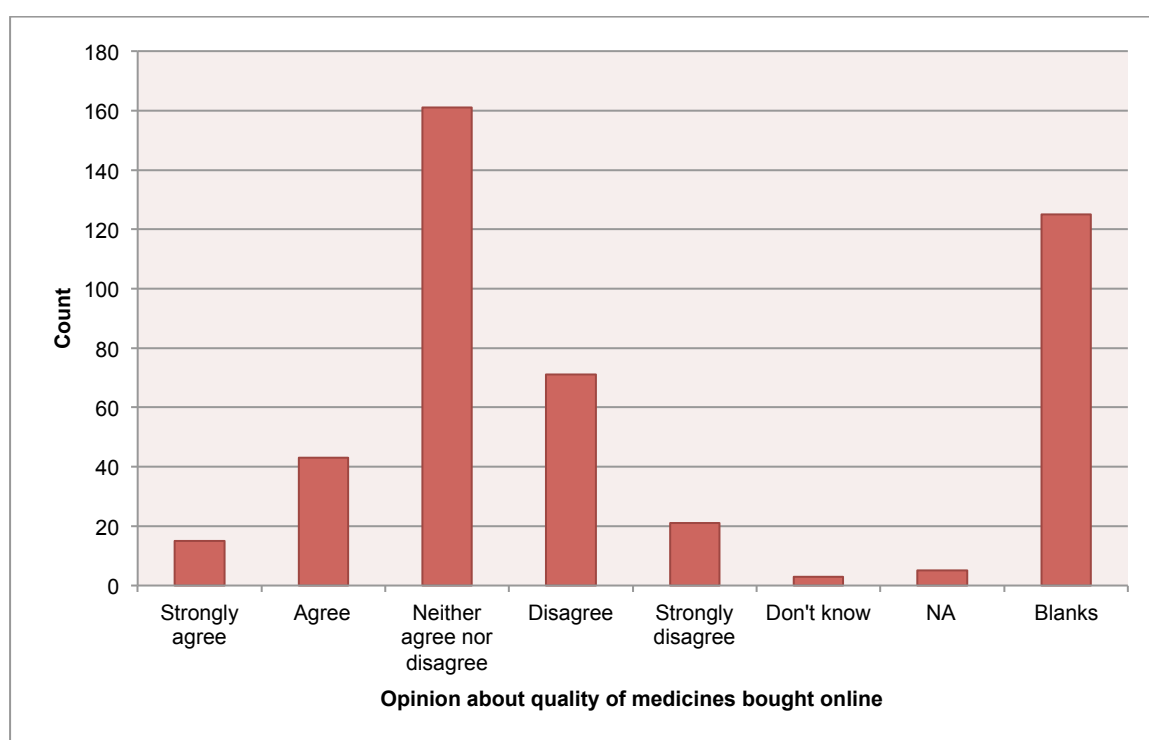


Figure 5.12. Opinion about the statement that quality of medicines bought online is the same as that from the local pharmacies in Malta

Most of those who responded to the question about whether the quality of medicines is the same as those bought online, 36%; n=161, 'neither agreed nor disagreed'. Twenty percent (20.8%) 'disagree' (n=71) or 'strongly disagree' (n=20) that the quality is the same as that obtained from local pharmacies in Malta while 13.1% 'agree' or 'strongly agree'. Although the question did not specify whether the quality is inferior or superior, reference to Fig 5.8 shows

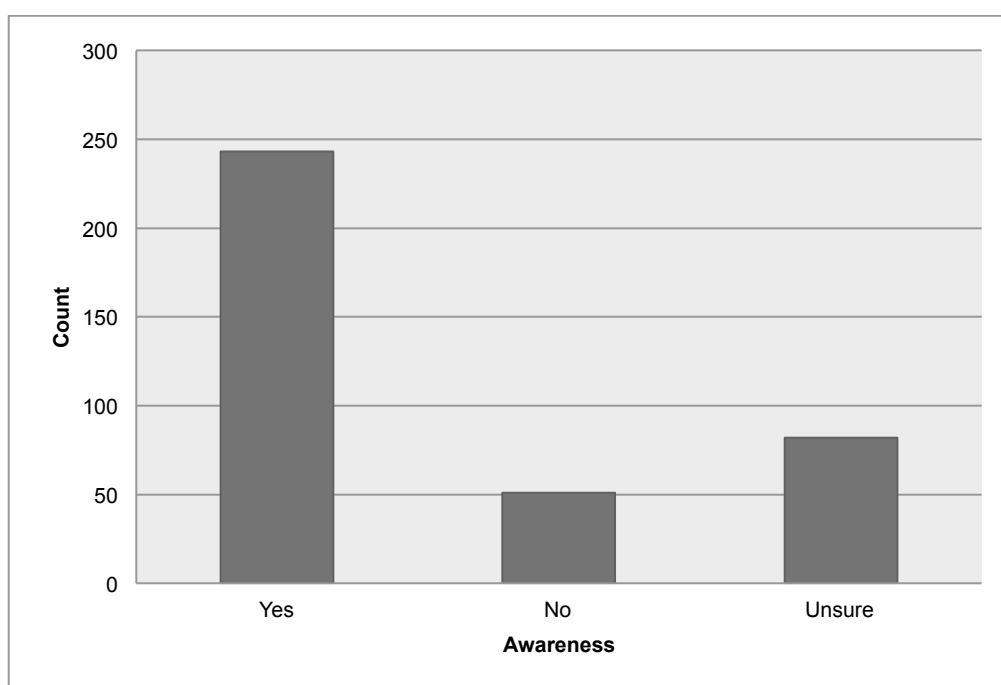
that 65 respondents had actually already chosen the option 'I think quality of medicines may be inferior to local'.

Table 5.8. Associations between demographics and opinion about the statement that quality of medicines bought online is the same as that from the local pharmacies in Malta

	Strongly agree/ agree	Undecided	Strongly disagree/ disagree
Age	Counts (% within age group)		
18-34years	18 (23%)	39 (51%)	20 (26%)
35-44 years	11 (22%)	25 (50%)	14 (28%)
45-54 years	9 (18%)	23 (45%)	19 (37%)
55-64 years	11 (17%)	37 (58%)	16 (25%)
>65 years	9 (13%)	39 (55%)	23 (32%)
Total	58	163	92
Missing n=131			
Association with age	Chi-square 5.811 (8) p value .668		
Gender	Counts (% within gender group)		
Male	22 (19%)	68 (57%)	29 (24%)
Female	36 (19%)	94 (49%)	63 (33%)
Total	58	162	92
Missing n=132			
Association with gender	Chi-square 2.719 (2) p value .257		
Educational level	Counts (% within educational levels)		
Primary	9 (21%)	22(50%)	13 (30%)
Secondary	20 (18%)	56(50%)	36 (32%)
Post secondary/tertiary/ postgrad	29 (19%)	84(55%)	41 (27%)
Total	58	162	90
Missing n=134			
Association with educational level	Chi-square 1.108 (4) p value .893		

5.12 Awareness of Counterfeits

As seen in Figure 5.13 below, more than half of the respondents (54.7%; n=243) were aware of counterfeit or false products being available over the Internet. Chi-square tests were undertaken to analyse any associations between demographics (age, gender and education) and the awareness that individuals have about the existence of counterfeit medicines being available over the internet as seen in Table 5.9. None of the differences were statistically significant.



Missing n= 68

Figure 5.13. Awareness of counterfeit medicines

Table 5.9. Associations between age/educational level and awareness of counterfeit medicines

	Yes	No	Unsure
Age	Counts (% within age group)		
18-34years	52 (61%)	14 (16%)	20 (23%)
35-44 years	37 (70%)	6 (11%)	10 (19%)
45-54 years	41 (59%)	9 (13%)	19 (28%)
55-64 years	63 (77%)	7 (9%)	12 (15%)
>65 years	49 (58%)	15 (18%)	21 (25%)
Total	242	51	82
Missing n=69			
Association with age	Chi-square 10.099 (8) $p = .258$		
Gender	Counts (% within gender group)		
Male	97 (67%)	18 (13%)	29 (20%)
Female	144 (63%)	33 (14%)	52 (23%)
Total	241	51	81
Missing n=71			
Association with gender	Chi-square .779 (2) $p = .677$		
Educational level	Counts (% within educational levels)		
Primary	26 (55%)	9 (19%)	12 (26%)
Secondary	97 (66%)	16 (11%)	34 (23%)
Post secondary/tertiary/ postgrad	117 (66%)	26 (15%)	35 (20%)
Total	240	51	81
Missing n=72			
Association with educational level	Chi-square 3.474 (4) $p = .482$		

5.13 Feedback about counterfeit medicines available over the Internet

Seventy respondents (16%) gave feedback about their awareness of counterfeits found on the Internet. These comments were grouped into 13 themes as seen in Table 5.10 below. The most common feedback was related to respondent's lack of trust of the Internet and of medicines' quality purchased through it. The same frequency of respondents expressed that they simply do not purchase or do not agree with purchasing online. A large number also confirmed that they are aware of counterfeit medicines. Out of these 70

respondents, only one explained that buying a product such as Lecithin (supplement used for hypercholesterolemia and neurologic disorders) does not have harmful repercussions.

Table 5.10. Feedback related to false/ counterfeit medicines on Internet

	Theme	Frequency
1	Lack of regulation of internet	3
2	Assume there are counterfeits	5
3	Depends on website	3
4	Not trusting of internet in general	15
	Don't trust what is in them	
	Might not be good quality	
5	Not aware; not sure	6
	Never tried	
6	Aware	10
	Aware and therefore do not buy	
7	Does not or never buys online	15
	Avoids	
	Only buys locally	
	Disagree with buying POM and other medicines on internet	
8	Safety issues	3
9	Not familiar with internet	3
	No internet	
10	Does not think specific products eg. Lecithin could be harmful from internet	1
11	Disappointed with internet purchase	1
12	There could be false as well as good products	2
	Never know	
13	Till available locally, buy from Malta	1

5.14 Trust in different types of sources of information about medicines

Question 19 dealt with sources of advice and information related to medicines' use. The question asked which "type of information about medicines do you rely on?" The largest proportion chose their doctor as the most reliable source of information.

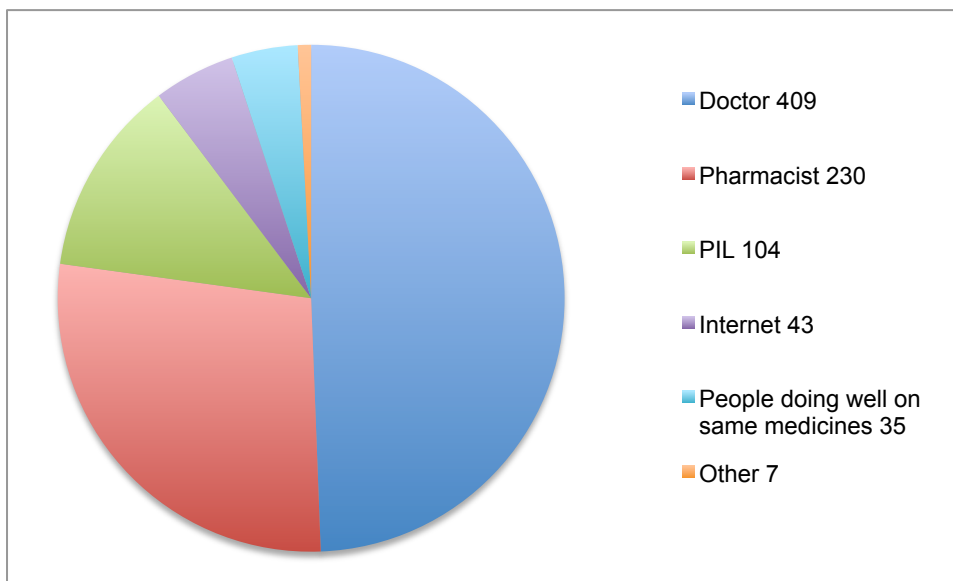


Figure 5.14. Which sources of information do you rely on? (N=444)

Of the 409 that rely on doctors for advice and information, slightly more than half (231) also trust the pharmacist. Eighty-three responded that they trust doctor, and/or pharmacist as well as the patient information leaflet (PIL). More than half (25) of those that rely on the Internet had also ticked doctor, pharmacist and PIL.

Other sources (n=7) included national authorities, reliable journals, summary of product characteristics (SPC), own knowledge and nurses.

5.15 Respondents' general feedback

Some respondents used the free text section to express their concerns and experiences related to medicines and their supply. In Table 5.11 below, the comments were grouped into themes and the frequency for each is reported, with most commonly reported themes first. The full comments can be referred to in Appendix 5.

Table 5.11. General feedback given by respondents

	Theme	Frequency
1	Comments related to high cost of medicines in Malta and needing subsidised medicines Examples included: Omnic, Galvus, prostate pills, glucosamine, osteocare, avamys (fluticasone nasal spray), levothyroxine, sertraline, testosterone Quote from one respondent: "The only concern I have regarding medicines are the prices! They are very expensive. It's stressful seeing my grand-parents buying so much medicine since they suffer both high/low pressure, sugar and diabetes, that they struggle to buy them"	15
2	Comments about always being in contact with doctor and relying on doctor's advice	12
3	Comments about satisfaction with the service in Malta and medicines given through the health system including the private pharmacies Quote from one respondent: "Maybe reason I never ordered to buy online, cause we have very helpful pharmacists in the area that even if medicine is not currently available, they take my number and call me when available or get it specifically for me. Also, I trust the, a lot as they are very strict with prescriptions especially where antibiotics are concerned."	11
4	Comments about dissatisfaction with quality of NHS medicines due to frequent change in brands and other problems also related to private supply Quote from one respondent: "Frustrated with the difficulty getting (Cynomel 0.025mg) thyroid medication that I must have everyday. Can only buy at hospital, and on occasion, they do not have ANY available. How can this be?" Quote from another respondent: "I feel that the quality of pills obtained free from gov. health system has degenerated (eg. Diovan to Valsartan)"	11

5	Comments about existing awareness among the Maltese of issues about safety Quote from a respondent: "The internet is a powerful tool if used correctly. In Malta there is not enough education about the services and availability of internet users. I do not like buying clothes online since I prefer to see the texture and fit. I cannot understand how someone can risk buying medicines online- I care more about myself and my body- I also question the doctor and pharmacist why I am getting this and that medicine and I need to check expiry dates and quality before I buy."	9
6	Comments about needing more knowledge about medicines they are taking including more knowledge about herbal remedies; about need for more awareness about medicines online and about their safety Quote from a respondent: "Well done! Much needed research! POMs purchased on the web need surveillance. We need more awareness to poor quality/fake POMs acquired on the web. Many like steroids or hormones cause psychosis/relapses. This will reduce hospital admissions for this and other disorders eg. liver toxicity. POM purchase of steroids off the web is a huge + tragic contemporary reality." Quote from another respondent: "I think more information should be made available about buying medicines online; especially certified/registered online pharmacy so that people can identify legitimate sellers"	7
7	Comments regarding expensive prices of medicines in Malta compared to abroad Quote from a respondent: "Prices of medicines in Malta seem to be much higher than in the rest of Europe. In some cases the differences is quite stunning. Ex. Zyrtec or cetirizina tablets and Lipanthyl (in Malta around 12 euro in France around 6 euro)"	4
8	Comments that buying medicines online would not be a problem if reputable and if quality is guaranteed Quote from a respondent: "If I was sure that the product (medicine) is of the same quality and brand that I buy locally and the price is lower I would highly consider buying from the internet. (obviously, if not needed immediately)"	3
9	Comments about being healthy and only uses OTCs and supplements	2
10	Comments about disagreeing and not intending to purchase online	2
11	Comments about being unaware whether medicine can be obtained free from NHS	2

12	Comments about doctor's prescribing	2
13	Comments about difficulties to fill questionnaire	2
14	Comments about internet use for purchasing medicines not necessary for Malta	1
15	Comment about free medicines going to waste	1
16	Comment about increase in retail prices	1
17	Comments about the need for more treatment options	1
18	Comments about side effects with medicines purchased online	1
19	Comment about not having internet	1
20	Comment about local availability	1
21	Personal stories	3

These comments were analysed further in Chapter 6 under Table 6.1.

5.16 Summary of quantitative study

The majority of the respondents in this study had experience with use of POM medicines. Seventy-five percent (Figure 5.4) of the respondents reported buying medicines through out-of-pocket payments mostly because either they are not entitled to get free medication (38%) or because the medicine is not available on the government formulary (26%) (Figure 5.5). Only 1% stated that they purchase or have purchased POM medicines outside the local market, two of whom purchased online in the past. 4.3% of the respondents reported purchasing OTCs online giving further details about their online purchases, for two main reasons, lower cost and lack of availability in Malta. Therefore one can conclude that purchasing online is not a common trend in Malta with the main reason being that of safety concerns. This was associated with age, mostly with

the under-35 year olds and the 55 to 64-year olds, and with a higher educational level.

Forty-one percent (41%) think that a problem can happen with purchasing a medicinal product over the Internet (Figure 5.10). Respondents who were more highly educated were more likely to answer that it was 'unlikely' there would be a problem with purchasing a medicinal product over the Internet, compared to those with primary education only. In fact no one in the primary educational level thought it 'unlikely'. Yet the majority (55%) of the respondents were aware of the existence of counterfeit medicines over the Internet (Figure 5.13).

These results were investigated in the qualitative study described in the next two chapters. The study aimed at understanding the concerns and reasons some of the survey participants had when purchasing any type of medicine online.

Chapter 6 Qualitative study

The first step in qualitative work is for the researcher to reflect on how to provide context and understanding to the audience both before and during the research process.¹¹⁴

While objectivity is valued in a quantitative paradigm, subjectivity is positively valued in the qualitative paradigm. Some researchers believe that “objectivity is a myth” since it is almost impossible to isolate one’s own beliefs and background while conducting a study.¹¹⁵ Beliefs and values exist both with the researcher as well as the participants. Their ‘humanness’ and ‘subjectivity’, are being used as a research tool in this type of study.⁸⁴

The first step is however to establish the researcher’s position since this is a major influential factor on the entire research in other words this is where the researcher needs to be ‘reflexive.’^{115,84}

“Reflexivity in a research context refers to the process of critically reflecting on the knowledge we produce, and our role in producing that knowledge.”⁸⁴

The researcher’s position, biases and assumptions must be clear since his/her subjectivity is critical to the research process and outcome of the findings.¹¹⁵ In this way the audience can put into perspective the background and ‘filters’ that lead to the particular questions being asked, how data were gathered and analysed, and how the findings were reported. It is most important that the readers can understand where the researcher is coming from for their own conclusions about the findings.¹¹⁴

Only then, through a sound reflection and a rigorous process will qualitative research provide “*unique opportunities for expanding our understanding of the social and clinical world that we inhabit.*”¹¹⁵

6.1 Preparation for the interview guide

6.1.1 Belief about Medicines (BMQ)

A strong theme that emerged from comments given by the survey respondents was that they would not risk their lives and their health by purchasing medicines from the Internet. Understanding this phenomenon was the aim of the qualitative study. An insight as to whether this belief would be related to age or a Maltese ingrained culture would be revealing. One would need to understand what drives people to or prevent them from purchasing medicines outside the local supply chain. Beliefs about medicines have been researched extensively and can be measurable through the 'Belief about Medicines Questionnaire' (BMQ) explained briefly here below.

Beliefs about health emerge primarily from an individual's education and knowledge together with the influence health care providers exert on their patients' opinion. Therefore a mutual relationship arises between the "individuals' beliefs and the environment to which they are exposed."¹¹⁶ In a Maltese study, where the BMQ was translated to the Maltese language and analysed among the population, it has been concluded that patients with different educational levels should be counseled differently about their medicines.¹¹⁶ Another aspect of this study was that younger patients would also require a different type of counseling that involves "personal necessity to adhere to the prescribed medication."¹¹⁶

Through this Maltese BMQ study, it was found that people understood the statement of 'natural remedies' in different ways, this was also found in the original BMQ study.¹¹⁶ Since natural remedies are still considered relatively new in Malta, such preparations may be more appealing to the younger generation while older people might be misled in understanding what the term means. Natural medicine was part of early Maltese folklore, however this has been displaced by today's conventional medicine. In addition, Maltese medical practitioners seem not to have much faith in such remedies possibly because of the over promotion of conventional medicine.¹¹⁶

This background about belief about medicines informed the interview guide.

One of the included questions asked participants about their beliefs and opinion of what constitutes a medicine. This question sought to understand what types of medicines they include within that term, for example whether a herbal remedy is considered a medicine or not. The other topic included in the guide was about the individual's trust in their health professional. The reason for this was to understand how their opinion could be influenced by their health professional.

6.1.2 Survey commentary

The free text feedback section within the questionnaire of the quantitative study, was reviewed qualitatively by categorising the responses into main themes as per table 6.1 below. Categorisation of the themes is further to Table 5.11. This preliminary data was useful to inform the topic guide for the interviews as per Appendix 6.

Table 6.1. Comments from respondents who answered the questionnaire of the survey

Keyword	Theme
Free	Needs free medicines Comments about cost and that certain medicines are not subsidised
Knowledge	More knowledge is needed about medicines they will be taking More knowledge about safety More knowledge about medicines that can be bought online
Personal	Personal experiences
Waste	Free medicines go to waste due to short expiry
Doctor	In contact with my doctor for regular tests Rely on doctor's advice (1 mentioned pharmacist)
Satisfied	Satisfied with medicines & service Satisfied with POYC and NHS system Satisfied and trust pharmacist
Minimal	Healthy and uses only supplements eg. arthritis
medicine use	Medicines for pain/ flu from local pharmacy
Not necessary	Internet use not necessary for Malta
Internet safety	Awareness of internet issues and safety

awareness	
Dissatisfied/ Concerned	<p>Degenerated quality of medicines from NHS</p> <p>Concerned about side effects from change of brands</p> <p>Wish to believe that free medicines are good</p> <p>Change of brand issues from NHS</p> <p>Concern about conflicting information between professional and patient information leaflet (PIL)</p> <p>OOS concern both of NHS and privately</p> <p>Suggests improvement in bureaucratic paper work for free entitlement</p>
High Cost	Expensive medicines from Malta when compared to abroad
Retail cost	Increase in price of medicines bought from local pharmacy
Buy online	<p>Would buy online if site is reputable</p> <p>Assumes safety if site is reputable</p> <p>Would consider</p>
Lack of treatment	Needs more treatment
Not purchase	<p>Does not intend to purchase online</p> <p>Never bought online</p>
Problems with online	Experienced problems with medicines bought online
Access	Not aware if medicines taken can be taken free from NHS
No internet	No internet
Availability	Sometimes do not find locally
Natural	Doctors too eager to prescribe and tries to use herbals first

6.2 Participant selection

Qualitative samples are often purposive and use subjects from whom the most can be learned. The sample could be homogenous (similar characteristics), convenience sample (readily available), critical case sample (proves the main findings).¹¹⁷ The strategy most applicable and used in this study was *stratification* with the aim of having a range and diverse sample with participants of different ages, gender and educational and work status.⁸⁴

Participants included individuals who expressed an interest in participating in an interview when they returned the survey. A separate invitation was designed and mailed with the questionnaire that asked the participants about their

willingness to take part in an interview (opt-in). If they were interested in participating in the interview, they were asked to provide a contact number (this kept the survey anonymous). They were advised that they would be contacted by the researcher at a later date to take part voluntarily in a semi-structured interview. When contacted, the participant was given an explanation of this study and an appointment was arranged for the interview. Ideally this took place face to face, however some participants who had very busy schedules offered to answer questions over the phone and this was conceded so as not to lose the opportunity of their participation.

They were informed that the interview would be audio recorded for analysis purposes but that their participation would be anonymous and confidential. A written consent form was sent to them in advance and returned to the researcher before the interview took place as approved by ethics.

Five interviewees were purposively chosen from the questionnaire participants who expressed an interest in taking part in the interview. The selection took into consideration the background information and demographic information submitted through the questionnaire. Originally, more interviews were planned however the cases had to be chosen from among those survey respondents who showed interest in taking part in the qualitative study. It was unfortunate that many participants that actually bought medicinals online had not shown interest to take part in the qualitative study. It was also becoming difficult to trace some people since they were either abroad or did not wish to take part anymore. Making appointments took several attempts.

Both female and male participants of various ages were selected; (three females: two 60 year olds with secondary and tertiary level of education, and one 41 year old post-graduate; two males: one 24 year old post-graduate and one 41 year old with a tertiary level of education). Data from these five interviews revealed enough information and nothing new was being generated by the last interview. The aim was to obtain data that was rich enough to provide enough depth within the time available for this project.⁸⁴

Inclusion criteria included participants who showed interest through the answers

given in the survey response. Exclusion criteria included individuals under 18 years of age.

The interviewees' background information was noted from the demographic information they gave in the survey. In this way the researcher felt more at ease with the interviewee. These details were discussed with the supervisor who prepared the researcher through several case scenarios.

6.3 Data Gathering: face-to-face and phone interviews

The data gathering process in qualitative research is *relational* because it involves a researcher-participant interaction. It requires the researcher to be aware that individuals come from various social worlds' yet it is also reflexive requiring the researcher on the other hand to be self-critical in his or her interpretation.¹¹⁷

Since data collection is dependent on relationships, the "power of dynamics"¹¹⁷ influences the data and interpretations the research makes of it. Therefore the quality of the rapport created between the researcher and the participants is crucial. Such a rapport is easier to achieve in face-to-face interviews where personal introductions prepare for a less intimidating feel that many people experience when they do not know what to expect. Phone interviews were less effective in this respect because of the lack of visual contact.¹¹⁸ Another advantage of face-to-face interviews is the lower demands of cognitive burden vis a vis the telephone interviews that could be more complex.¹¹⁸

The face-to-face interviews were conducted at localities close to the participants' residence or place of work for their convenience. This factor encouraged participation due to obvious time constraints that would otherwise hinder participation.

The interview was of the semi-structured type. A topic guide and a set of prompts and probing questions were set as agreed in the ethical approval (Appendix 1). The advantage of semi-structured interviews over the structured

type is that the interviewer has the flexibility to adapt the question according to the direction of the responses with the aim of letting the conversation flow naturally.¹¹⁵ Such an interview allows the interviewer to follow the path that the respondent is taking and allows more freedom than the structured type.

Participation was confidential, and all data anonymised. Anonymity was achieved through removing all information that participants mention in relation to people's names or place names. The interviews were audio-recorded using a Dictaphone. These recordings were transcribed verbatim and anonymised. The audio-recordings will be deleted as soon as the study has been concluded.

6.4 Transcribing Process

There are many styles of transcription, however, the style used in this study was that of audio transcription, also called orthographic or verbatim. Here the transcript focused on the spoken words and sounds produced from the recorded data. "Spoken language and written language are very different."⁸⁴ Spoken language does not use punctuation but rather pauses (in different lengths), different speeds of speech to express different parts of the phrase, and different volumes. When transcribing, it is important to create a transcript that is a good representation of the spoken language together with all the pauses and speech nuances that occurred in the interview.

Punctuation marks were kept to a minimum since the concept of a 'sentence' is not clearly reflected in spoken language. Discourse is continuous and sometimes phrases led into each other without giving an indication whether the sentence was completed or not. Adding punctuation could change the sense in which the words are said. Therefore punctuation was used only where it kept the context of the wording. Pauses, laughter etc. were captured in the transcript to maintain a naturalistic version of the speech act as possible. A transcript notation system was used as described in table 6.2 below.

Table 6.2. Notation system adapted from the examples given in reference by Braun & Clarke⁸⁴

Notation	Feature
<u>Underline</u>	To emphasise a word
((pause))	Long pause
(.)	Short pause
((laughs))	Speaker laughing
()	Words in between are the best guess
((inaudible))	Completely inaudible
((in overlap))	Overlapping speech
(...)	Hesitation
“ ”	Quotation marks for speech quoted from another person

The audio data was transcribed as soon as possible after the interview was conducted so that the experience was still fresh and details were easier to capture. After each transcript was completed, the audio recording was listened to again after some time elapsed. In this way, tiny details, gaps etc. were filled in and this ascertained a good quality transcript.

The names of the participants were never used in the recordings and in the transcripts they were represented as ‘I’ indicating ‘interviewee’. There were no cases where names had to be removed because the information was kept anonymous all throughout.

6.5 Overview of analysis

Thematic analysis was used to analyse the data transcribed from the interviews. Thematic analysis has only been recognised as a distinctive method since around 2006 with a clearly outlined set of procedures for the social sciences as outlined by Braun and Clarke.⁸⁴ It differs from other type of qualitative analysis methods in that primarily it offers a flexible method of data collection and sample size as well as flexibility for identifying themes and can be used to practically answer any type of research question.⁸⁴

Other types of qualitative analysis do so from various aspects. Interpretative Phenomenological Analysis (IPA) is an approach, not just a method, and explores for example people's lived experiences and "orients to psychological concerns."⁸⁴ Grounded theory on the other hand is geared towards constructing a theoretical idea from the data. In narrative analysis, it is the understanding of the story told that needs to be kept intact for analysis.⁸⁴

Thematic analysis differs from these methods in two ways. First, its flexibility is advantageous to researchers who are not too experienced in qualitative analysis and as Braun and Clarke highlighted, it is a great 'starter' qualitative method.⁸⁴ Secondly, analysis results in breaking down of the interview into sections making most of the data collected. These sections subsequently give the structure to the analysis and allow interviews to be compared side by side in small pieces. Bryman says "the themes and subthemes are essentially recurring motifs in the text that are then applied to the data."¹¹⁹ Its limited interpretative power (as opposed to other methods such as IPA) allows the analysis to be a simple description of the participants' concerns. The aim of the research question for this project was in fact to describe the situation in Malta regarding what is going on with purchasing medicines and therefore TA was deemed as the appropriate method for analysis.

Such analysis allows the reporting of experiences within a realist framework. Themes or patterns across the various interview data show accounts of patients' realities with respect to sourcing their medicinal supply.

6.6 Process of thematic analysis

The method used in thematic analysis can be that of a realist type, that reports the reality through experiences of participants, or that of a constructionist, that which examines the ways in which experiences and so on are the results or effects of a "range of discourses operating within society."¹²⁰ The process involves the generation of themes that can emerge in a data-driven, 'bottom-up' way, on the basis of what is in the data or in a more 'top-down' fashion, where the researcher uses the data to explore particular theoretical ideas.⁸⁴

Thematic analysis in this study took an inductive approach allowing the coding process to evolve and therefore generate unanticipated insights.¹²⁰

This was conducted in the following stages:

1. Familiarisation with the data: initial ideas

This involved reading the transcript several times so as to familiarise oneself with the data. 'Noticings' involved anything the researcher noticed, however it was important to be aware that the researcher's personal experiences could limit what he or she sees in the data.⁸⁴ This was a point for further discussion in the next chapter. The process of familiarisation involved reading the data attentively and critically while processing thinking what the data can mean.

2. Coding

This is the process by which raw data starts to be converted into concepts that have a connection with each other.¹¹⁵ There are two main types of coding, selective and complete.

Selective is where only certain parts of the data is coded related to a particular phenomenon the researcher is interested in. Complete coding on the other hand aims to anything that is relevant to answering the research question within the entire data. Complete coding was the process adopted in this study where all the data was coded and then a more selective approach was taken later on.

3. Identifying patterns

While patterns were identified among the whole dataset, these were not considered important based on the frequency of occurrence. As Stephen Buetow (2010) indicates, "something in data can be important without appearing very frequently."¹¹⁵

4. Codes into themes

Similarities and overlaps between codes were identified, so that these then developed into “coding trees.”¹¹⁵ These structures allowed the researcher as well as the reader to understand how and why raw data were converted into a theme and what rules the researcher used “to govern inclusion or exclusion of specific data within or from a theme.”¹¹⁵

The process of creating themes is an “active process” in that the themes have to be sculpted out of the codes by the researcher. Therefore different researchers can produce different analyses from the same data that can also result in varying quality.¹¹⁵

5. Reviewing themes

There are 2 levels within this phase. The first involves reviewing the coded data extracts so that they form a coherent pattern and capture the contours of the coded data to form a thematic map. The second level relates to the entire data set where the validity of individual themes relates to the data set, as a whole.¹²⁰

6. Defining themes

Naming each theme and determining which aspect each theme captures. A detailed analysis is written for each theme in chapter 7.

7. Analysis Report

A report of the analysis is written as a story of the data that takes an interesting path that relates about the data within and across the themes and in their association to the research question.¹²⁰

Braun and Clarke’s checklist of criteria¹²⁰ for good thematic analysis was used to prove the rigour and quality of the process:

1. The data was transcribed to an appropriate level of detail, and the transcripts were checked against the tapes for “accuracy”.
2. Each data item was given equal attention in the coding process. (Three levels of coding were used: level 1 coding examined the data line by line, level 2 coding compared coded data that seem to form clusters and therefore create categories and level 3 is the emergence of themes form these categories).
3. Themes were not generated from a few vivid examples (an anecdotal approach), but instead the coding process was thorough, inclusive and comprehensive.
4. All relevant extracts for each theme were collated.
5. Themes were checked against each other and back to the original data set. Themes are internally coherent, consistent, and distinctive.
6. Data was analysed – interpreted, made sense of - rather than just paraphrased or described
7. A good balance between analytic narrative and illustrative extracts is provided.
8. Enough time was allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.

6.7 Ensuring quality of the study

Methodologists have debated at length and have various opinions about what constitutes good quality qualitative research. “Demonstrating rigour in qualitative studies is essential so that the research findings have the “integrity” to make an impact on practice, policy or both.”¹²¹ Lincoln and Guba speak of ‘trustworthiness’ in view of its four criteria, that of credibility concerning how confident one is that the findings are true, transferability of the findings to other contexts, dependability that the findings are consistent and could be repeated, and confirmability that the findings emerging from the respondents and not due to researcher bias.^{122,114}

Wolcott writes about validity in qualitative research and suggests how this can

be achieved such as including the primary data in the final report so that the readers can develop their own conclusions.¹²²

Trustworthiness can be ensured through member checking, peer debriefing, triangulation, audit trail and thick description.¹²¹ Researchers in clinical pharmacy for example have suggested that at least two different strategies should be incorporated to ensure rigour.¹²¹ In the present study thick description and peer-debriefing were adopted.

6.7.1 Cross-coding

The process here involved constant discussion of the methodology, data analysis and critical thinking with an experienced and disinterested debriefer who in this study was the academic supervisor. The second interview transcript was independently coded by the supervisor and compared to the researcher's own coding. After this, coding in most of the transcripts were reviewed by the supervisor. The supervisor's cross-coding did not reveal new codes but rather grouped more data with the already identified codes. In this way codes were discussed, revised and clarified (e.g. quotes moved to other codes, or codes renamed) before the next step of the analysis (theming) took place.

Furthermore triangulation of the data of the two studies was an important approach to ensuring quality of the overall research. This gives a more comprehensive research output with a more reflexive analysis of the overall data.¹²³

The analysis is reported in Chapter 7.

Chapter 7 Discussion on Qualitative Findings

Eight themes emerged from the codes generated from the transcripts of the interviews and are described below in Table 7.1. The themes are discussed individually throughout this chapter.

Table 7.1. Generation of Themes through thematic analysis

Codes (19)	Category type (10)	Theme (8)
What is a medicine & what it does What type of medicine is included in term 'medicine'	Belief of medicines	Importance of knowledge of categorisation of medicines
Awareness: active part in treatment/diagnosis	Active part in decision for one's own health	Role of health autonomy
Care for one's health Mistrust in internet Mistrust in the market	Decision for one's own health	Role of self care
Relationship: doctor Relationship: pharmacist Relationship: with location	Relationships	Importance of relationships
Trust in health professional within hierarchy Mistrust in health professional	Trust Mistrust	Importance of trust
Local supply concern NHS supply concern No supply concern Online purchase Private pharmacy assets Type of purchase	Supply Supply (other side of problem) Supply	Influence of restriction of supply
Purchase irrespective of cost	Influence of cost	Influence of cost

Participants were anonymised and given pseudonyms to maintain their anonymity. Each participant with the pseudonym is described in Table 7.2 below.

Table 7.2. Interviewee's characteristics

	F/M	Age	Education	Occupation	Condition or illness	Online Purchase	Comment
Chloe	F	41	Postgrad	Full time	Asthma High BP Cancer	No	<ul style="list-style-type: none"> • Needed POM for a short period of time • Buys all her medicines from pharmacies in Malta and a couple of times from pharmacies abroad
Paulette	F	59	Secondary	Unemployed	High BP; High cholesterol	No	<ul style="list-style-type: none"> • Needs chronic POM • Gets POMs all free from NHS
Kenneth	M	41	Tertiary	Full time	nil	Yes	<ul style="list-style-type: none"> • Buys vitamins directly online from the manufacturer for his daughter
Winston	M	24	Postgrad	Student	Asthma Rheumatoid arthritis	Yes	<ul style="list-style-type: none"> • Purchases medicines from online pharmacies during his residence abroad
Lilly	F	61	Tertiary	Full time	High cholesterol	No	<ul style="list-style-type: none"> • Buys when she needs from pharmacy in Malta • Is not clear whether she bought online before but now she gets a supplement through a friend from abroad because it is not available in Malta

7.1 Importance of knowledge of categorisation of medicines

Medicines are used continuously and the term itself has been passed on from generation to generation. The importance of being aware of what a medicine actually encompasses is important for the understanding of safety concerns and risks associated with it. Its definition in one's state of mind is important to establish before understanding what he or she would purchase, why and from where. A medication has been defined as '*a product that contains a compound with proven biological effects, plus excipients, or excipients only; it may also*

*contain contaminants; the active compound is usually a drug or pro-drug, but may be a cellular element.'*¹²⁴

The participants in this qualitative study have attributed a medicine as being mostly referred to as an external chemical that is used to make a person feel better, treat a condition or restrain symptoms. One participant showed some hesitation in answering this question as follows:

"A chemical compound...((laugh)) that somehow (we think we) feel better. That's how I see it, as an ((inaudible)) ((laughs))" Chloe

While for Lilly, a medicine is strictly that prescribed by a doctor, others have a wider view of what a medicine is and they also include over-the-counter (OTC) products but then speak of levels of potency within the same term. In fact, when challenged on how she would consider herbals and vitamins, Chloe explained that she thought of medicines as those that are natural and those that are considered chemicals and then there are the more powerful ones.

This sense of hierarchy was also seen in Paulette's response. She classifies medicines at different levels however for her, medicine is mainly that which the doctor prescribes.

With regards to OTC products, the term was not clearly defined by the participants. For example Kenneth considers certain OTCs such as non-steroidals and paracetamol as medicine, then categorically excludes vitamins as being related to medicines but rather as minerals.

When Winston was asked if herbals, vitamins and supplements are included as medicines, he referred especially to supplements and claimed that they fall under the same category. With respect to herbals, however he claimed that it is "still the same because you have a substance that is external".

Of particular concern was Lilly's lack of consideration of paracetamol as a medicine. It seems that she has the impression that because some OTC products, mostly the common ones like vitamins and paracetamol, are bought easily without any questions asked, then these are not medicines. While this reasoning may be correct for vitamins, because these are in fact considered as a category on their own, paracetamol is pharmaceutically classified as an analgesic and antipyretic, that is, a class within the term 'medicine'. It can be a concern when people are not aware of the dangers of a commonly used medicine such as this.

Paracetamol overdoses has been investigated intensely both on the level of self harm poisoning as well as for many cases of accidental deaths due to hepatotoxicity. The UK Medicines Control Agency (later known as the Medicines and Healthcare Products Regulatory Agency (MHRA) had recommended that legislation about reducing pack sizes of paracetamol should be introduced so that consumer's access to these tablets would be in limited quantities.¹²⁵ This legislation was introduced in the UK as far as 1998 and therefore the phenomenon of paracetamol harm is now a confirmed healthcare concern.

"A medicine would be something more or less prescribed by a doctor. I mean a vitamin doesn't have to be, it can be bought over the counter (.) emm I don't know if you classify ah paracetamol as a medicine it can be bought (.) but medicines for me are defined yes against a doctor's prescription" Lilly

Yet an important observation was that despite this opinion, the participant still had a sense of awareness about safety issues with certain products although she does not classify them as medicines. She explains how guidance is needed with products such as herbals due to possibility of serious consequences.

"No! I don't think so, I think herbal medicine can (.) you know when you think (.) I mean in history how herbal medicine was used (.) I mean you can't just pick and choose at random. You

need you need (.) you need guidance basically I'm sure it can be quite effective but you need guidance because herbs and eeee(.) let's say the biological side of medicine (.) it can have very serious I mean consequences" Lilly

In the light of such consumer background beliefs, one can then understand why some people may buy certain products over the Internet and not others. Individuals may consider products for purchasing online because they have the idea that they are not medicines and so imagine that there are no safety concerns involved. However one needs to first understand other contributory factors being discussed in the next sections.

7.2 Role of health autonomy

Patient empowerment has been a concept focused upon in countries such as England. The promotion of the involvement of individuals in their own healthcare decisions is in fact part of NHS England's statutory duties. This concept has been based upon evidence that suggests that people involved in decisions about their own healthcare report greater satisfaction about the services they receive, experience less regret about decisions taken and would more likely say that decisions made were those most appropriate to them, make fewer complaints than those that are not involved in decisions about their own care.¹²⁶ The evidence points to the fact that if the patient has the appropriate knowledge, safety and quality of the health service is enhanced. This can also apply when deciding about one's own medicines where the individual's input would increase compliance and better treatment outcome. In the long run people's involvement adds value to their lives and would also reduce the burden on the healthcare system.

The participants' background varied between lay individuals to those with some knowledge of medical background. While Kenneth had some knowledge through his health and safety course he had attended in the past, Chloe did not make any claims of having any medical background knowledge, yet she

declared that she reads everything about her medication and does not comply with her treatment blindly.

On the other hand Kenneth showed that he was capable of understanding the situation he had found himself in, when he was admitted to hospital for pneumonia. He gave a detailed account of what he suspected was the cause of his illness and how it should be prevented.

“I traced it I got Dr B and told him to go and take a sample now not tomorrow cause if there is another wedding tomorrow (.....)

I am 101% for sure ((pause)) I wasn't exposed anywhere else I wasn't exposed to showerheads, I didn't go abroad

I told him I think it is bacterial and he told me why do you think that I was exposed to nothing except to the green water stagnant water from a fountain that was never switched on for a whole winter and I think it has the right minerals the right food the right temperature, he put this on, the water is sky high, there was a breeze and I inhaled” (Kenneth)

Having a background in healthcare is not the only requisite towards autonomy in one's own health. Kenneth seemed to be very alert in all that goes on with his health and takes an active role also because he takes an interest. Although several patients may not have any medical knowledge they still take an active role simply out of an interest they have about what is going on with their health. However it goes without saying that in Kenneth's case, his background knowledge has given him confidence and consequently autonomy as to how he deals with his health.

Autonomy however is not enough and one needs to be aware about trustworthy sources before taking decisions about their health or treatment options. Therefore what pathways of trust does the patient adopt to take care of him/her self? This is explained in the next section.

7.3 Trusting the role of self-care

Self-care being referred to here is about how individuals participate towards the treatment goals that is then decided upon with their health care professional. Paulette for example is very aware and fearful about her conditions and therefore takes a self-care attitude of being faithful to what her doctor advises her. She confides that she is unlike her husband who is more liberal in the way he cares for himself. She explains as follows:

“But I am not that type, before I take anything, its either because I have hypertension and cholesterol and so I am scared, you understood? I am scared and so I do not just ((pause)) I like to ask” Paulette

Paulette had already admitted earlier in the interview that in her opinion, medicines are practically those that the doctor prescribes for her and therefore one can assume that she gets advice from her doctor for whatever treatment she needs. Chloe who had classified treatment on hierarchical levels, would not get OTCs from sources such as the Internet because she does not trust this route. Therefore although she has a wider mentality than that of Paulette in what constitutes a medicine (as seen in section 7.1), her lack of trust in the Internet is a principle of self care she believes in.

“I don’t mess (.) with getting, I don’t buy, I buy a lot of things online except medicine. I don’t think that’s (.) right because I would want to know from where it is originating. I don’t trust the internet for that.” Chloe

Interestingly, Lilly had a combination of these concepts, that of not wanting to be a “guinea pig” and would do what she can to prevent taking any treatment if this can be avoided, while also declaring having “absolute inhibitions” about internet purchasing related to her physical self.

“medicines and food (.) never ((pause)) I mean I really think the market is flooded with rubbish ((pause)) and there needs to be more control” Lilly

The impression that these participants give is the sense of conviction they show in their idea of how they feel that they are succeeding in taking care of their health responsibly. However there has also been a mention of individuals who unfortunately do not have this conviction because of circumstances beyond their control. Paulette spoke about her daughter who regularly suffers from migraine. She explains her relentless search for treatment as being the main scope of getting her health condition controlled. In her case, self-caring is not successful and is rather an issue for her. In fact Paulette relates how family members and friends purchase different medicines from pharmacies abroad for her daughter.

There are therefore two facets to take into consideration. While some people can ‘self-care’ effectively and serenely, there are others who become desperate in their attempt to care for themselves. Factors here need to be studied further, such as whether the system in Malta can be improved for similar groups of patients.

These findings about the theme of trust in self care leads into trust about relationships and their importance in the confidence patients need about their treatment decisions and outcome.

7.4 Importance of Relationships

There are many factors that contribute to the building or breaking of relationships between individuals that are also true for those between patients and health professionals. These factors are different for different people. One clear characteristic that emerged from these interviews is that an individual with a background of healthcare may appreciate the role of healthcare professionals

better than lay people who do not know what is involved in certain healthcare roles, usually those other than that of a doctor. Awareness of such roles is important so as to appreciate what health professionals can offer and how they can help the individual. This in turn gives the basis for building a relationship such as in the case of Kenneth:

"No I ask a lot but don't forget I (.) have a health background and I have an enormous respect towards the pharmacists I understand that their course is as long as that of a doctor and is more focused on medicines and so I take their opinion eg. I tell him does this have sugar? Can I buy a syrup that doesn't have sugar? "Yes of course we have a version like that" for example. What is this for exactly this medicine?" Kenneth

Kenneth continues to explain how the pharmacist speaks to him about what the treatment such as antibiotics actually do to the body and explains how Kenneth can go about to counteract the side effects at a later stage once the treatment has been completed. He notes that the pharmacist does not in any way hinder the doctor's decision on treatment, however explains very technically what would be happening in the body and how the body can be helped to recover effectively. The pharmacist used terms such as "detoxifying and cleaning" and "carbon bombing", terms that would only be used between health professionals or people with a scientific background.

Having such a background benefits the patient to get involved in a deeper conversation with his health professional. People feel at ease on a one to one level where the individual is not considered as a patient but rather an individual within a friendly context. In Kenneth's words, *"we speak on a wider spectrum"*. In addition, the level of confidence increases as time goes by. The professional gets to know the individual through various stages of his/her life and gets to automatically know the history without having to look up any records. As Kenneth befittingly put it *"you become the parishioner of the pharmacist"*.

Another participant, Lilly, also showed a blind confidence in the pharmacist. She emphasised the importance of having a good rapport with the pharmacist. She explains this both from her personal relationship with her pharmacist, who is within close proximity to her work premises, as well as through the experience she has of observing her elderly parents who have benefitted from the confidential rapport they have with their pharmacist. She also declared this in the context of having more confidence in buying any product needed from a pharmacist rather than online.

“emm (.) more than anything I am more (.) confident with something which is bought from a pharmacist” Lilly

“absolutely and I think you need to have a good rapport with your pharmacist you know (.) I mean (.) because I see from from my parents as well who are quite elderly my father is over 90 so (.) emm God bless him so you know they have a lot of confidence in their pharmacist (.) you know?” Lilly

There are different types of relationships, those that are built on getting to know one another leading into a reciprocal rapport and those that are more one-sided. This latter is of the type where the patient builds a trust in the health professional out of reverence rather than a relationship in itself especially in the case of one's own doctor. However, a cooperative type of relationship enhances a deeper communication where the individual feels free to ask the doctor about concerns raised about one's own health.

Usually a one-sided relationship is the type where the patient has a high esteem of the health professional and anything advised is obeyed blindly. Kenneth actually described his dad as being a 'military' type although he never was in the military. This was elucidated in the context of him going blindly to his family doctor with his discharge letter after recovery from hospital. In actual fact it is true that the family doctor should follow up the patient but it is doubtful how many patients actually keep their doctors informed about episodes outside their care. However, Kenneth here described his dad in a way that he blindly trusts

his doctor as being the one to take care of his health and therefore informs him of everything.

Kenneth also has full trust in the same family doctor as his dad, however with a different mentality:

"I stay on advice of doctor always for the choice of medicine but I ask. Even the doctor I ask him 'Does this have side effects grave that I am careful about'? Cause dizziness, feel nauseated He tells me 'no Kenneth this for example I gave you the best' (.) he tells me '((there aren't)) options, by force we have to go for this'

Kenneth explains further that the relationship is also nurtured from the doctor's side. He gave an example of when his doctor provided samples and thereby felt that by so doing he was acknowledging the relationship he built with his client that goes way to as early as his graduation.

A striking point emerged from the same interview regarding the gathering of family history notes. Many times it depends on what the patient or client tells the doctor. In many situations, it's the general practitioner that follows the patient however this may not always be the case. History taking can be very daunting because it depends on what the patient tells the doctor, since at present there is no seamless care between secondary and primary care. It is up to the patient to present the results and discharge letter to his family doctor. The best scenario is when the doctor can keep track of various family members so that he can forecast trends in health problems and the clients can benefit from tailor-made prevention advice because of the family history being built up in the doctor's database. Here there may be ethical issues involved. In fact, Kenneth was quite disturbed when his family doctor drew conclusions about him having the same pattern of chronic obstructive pulmonary disease (COPD) as his dad. However when the participant calmed down, he appreciated the depth of awareness the doctor had about him and valued a deeper trust in him.

"In my case I got in a bad mood, I reacted like children but I said 'yes its true there is a big chance that I am like my dad cause its rare for the doctor to fault rarely he knows me so much'" Kenneth

Others such as Chloe assume other valuable relationships that different health professionals have and that their different valuable roles are not overpowered by the doctor's role.

"I understand, no I understand that a pharmacist sometimes knows more about a compound than most doctors" (Chloe)

The relationships that can be built can be the basis of a good health service and can combat other factors that may impede satisfactory health outcomes. Time for example, is a major distress people battle continuously and when it comes to finding medicines on time within a busy schedule, it can become daunting. The interviews show that while some people get their medications from any pharmacy because time restricts them so much that they purchase from the location they are close to, as Chloe put it, *"it depends on the timings"*, others would wait and go to 'their' friendly pharmacist because they know that they are going to have a discussion about what to expect from the treatment and in a sense contribute to the beneficial outcome of the treatment.

The next theme described here below is about trust in the care provider, a determinant for a healthy relationship.

7.5 Importance of Trust in care provider

Who should we trust, the doctor? Only the doctor? Or should he be considered as part of a team of health professionals all intertwined in the responsibility for the outcome of a healthcare plan?

The trust or lack of trust in the healthcare provider may influence how we will go about deciding whether we will get professional advice on treatment options or not. In the case of the latter, it could mean that individuals would take their own initiative on how to treat and this may lead them to looking anywhere to acquire what they think would be in their competent arena.

The patient could have trust just in their doctor about the treatment and might not seek any pharmacist's professional help at all. So in this respect there would be no prescription reviewing to pick up issues of interactions or explanation of side effects to be expected. Therefore these type of patients would only trust what is provided and prescribed by their doctor.

The Medical Board of Australia commissioned a piece of independent social research that found doctors as the most trusted profession in Australia, along with nurses and pharmacists. The majority of respondents in this study claimed that it is very important to trust the doctor.¹²⁷ The most important factors highlighted in this Australian report were that confidence in doctors was instilled if these kept up to date, monitored treatment outcomes, communicate effectively, including explaining diagnoses in a way that the patient can understand.¹²⁷ Ninety per cent (90%) of the respondents ranked doctors and nurses as the highest professional they trust with 85% of them ranked pharmacists. The younger group (18-39) age group showed a bigger drop in trust in the pharmacist than for the doctors and nurses, in that there seems to be less trust in this professional among the 18-39 year olds as opposed to over 50 year olds.¹²⁷ Similar results were obtained in the 2013 Irish Medical Council study, in which 91% of participants trusted doctors.¹²⁷

Responses from the interviews of the present study varied from a total lack of trust in doctors in a way that a second opinion is always sought to total trust in the doctor's prescription of treatment as already described by Kenneth. Despite his faith in his family doctor, Kenneth had also complained about how doctors treated him in secondary care when he was recovering in hospital from pneumonia. He found out later from his own family doctor that he was being classified as a COPD patient all along, however there was never a mention of this to him or on his discharge letter saying so.

Other people want to ensure their safety and would not want to depend on a single consultation. Chloe gave clear signs of her mistrust in one doctor's advice and would practically always seek a second opinion.

"I always get a second opinion. Family issues taught me, emmm, always get a second opinion even with small things when it comes to health" Chloe

when you pass from a certain trauma you will be young from negligence of doctors, you (.) I was brought up not to trust them, you are understanding?" Chloe

Her mistrust goes on to be expressed through her doubts about how doctors choose treatments for their patients:

"and I'm also aware that doctors sometimes are given incentives to push a certain brand as against another. Sometimes I saw them in conventions of doctors. Sometimes in Malta conventions happen three at a time eg. sanofi Aventis. You see the doctors over there, they must be given something to push that instead of the other and I believe that" Chloe

Relationships and trust in the healthcare professionals are paramount in the process of delivery of efficient healthcare to the patient. Other facets will be discussed through further themes that emerged related to supply and availability of medicines in Malta.

7.6 Influence and consequences of restriction of supply

Supply of medicines in Malta can be obtained either through the government health service through an entitlement system or from the private 'brick-and-mortar' pharmacy. Problems with supply exist in both sectors as described here below.

7.6.1 Restrictions of supply from public healthcare system

The public healthcare system procures medicines through a tendering process. Approved specifications are published in an open call and offers that meet these requirements are submitted. Offers go through an evaluation process in which the first cheapest compliant product is awarded. This process results in many generic products being procured due to their lower prices in comparison to branded products.

The opinion about the quality of generic medicines has been debated extensively internationally. A study conducted in Malta showed that more than a third (37%) of the respondents would not replace their medicine with a generic easily, while only 3% would prefer to wait for the originator medicine until it is back in stock and therefore remain without medicine in the meantime.¹²⁸ This study does not seem to make a distinction to whether it is referring to generic products procured by the public healthcare system or those available from the private pharmacy. Also a systematic review on literature published between 2003 and 2014 reveals that despite the improvement of consumers' opinions of generic medicines, some patients still believe that "less expensive equals lower quality."¹²⁹ It appears that it's the consumers with higher levels of education that accept generics in contrast to the groups of lower socioeconomic and lower levels of education that seem to be the ones that do not trust them.¹²⁹

Since the public healthcare system procures medicines on the 'cheapest compliant with specifications' principle, certain more advanced medications do not stand a chance of being procured. Chloe gives an example of this.

“Yes, ah but I don’t qualify, the only time I qualified through a doctor and they were of a lesser quality (.) inhalers basically, I needed Oxis but they don’t bring Oxis. They bring a lesser quality. So it didn’t help me anyway (.) so (.)”

“hhhhh (.) well basically the government had a lesser, lesser (.) you know, effective”

“The government gives Ventolin, I need Oxis, turbuhaler for example that is basically it” Chloe

This participant categorised Oxis[®] as an alternative to Ventolin[®]. In reality Oxis[®] is formoterol found as a turbuhaler while Ventolin[®] is salbutamol. Both are bronchodilators but while Ventolin[®] (salbutamol) is short acting and used primarily for symptom relief (rescue medication), Oxis[®] is a long acting bronchodilator (used as a controller i.e. for long term control of symptoms), however this brand is only found as a turbuhaler. Generally speaking the active ingredients belong to the same class of medicines but are not interchangeable. The way this participant expressed herself however was that the government health service gets a lesser quality of medicine as the only type she could be entitled to but in reality the situation is that the service does not provide a vast choice of medicines in the event that the free medicine offered is not effective.

Winston similarly requires a powder formulation of salbutamol (Ventolin[®]) however salbutamol is currently available on the government formulary only as a metered-dose inhaler and not as a dry powder inhaler. He therefore purchases his required inhaler locally from private pharmacies and has never encountered any problems in supply locally. Lilly also described that the medicines her parents buy were never an issue with supply from the private pharmacy.

Quality, or the lack of it, is definitely a major factor that drives patients to purchasing medicines, be it choice of a particular brand over the cheaper version obtained by the government or be it that a particular brand that would

be most adapted for the efficient treatment for the patient is not available because it would not be considered amongst the first line treatments in the government formulary.

Lack of availability is another scenario of restricted medicinal supply. The availability of some medicines can provide not only effective treatment but also aid in making the patient's life more comfortable and less traumatic. Paulette described her mum's situation. She was an elderly woman, who was admitted to hospital and later was prescribed an anticoagulant, warfarin on her discharge. Warfarin is very commonly prescribed for atrial fibrillation as a blood thinner to prevent strokes. She explained how the doctors told her that besides warfarin, which was the treatment prescribed for her mum and which is available free of charge to anyone who needs it in Malta, there also exists an anticoagulant that works in the same way with the difference that it does not need the laborious monitoring a patient would have to go through. Warfarin requires patients to take weekly blood tests to monitor the Internationalized Normalized Ratio (INR) and amend the dose accordingly. Warfarin itself is very cheap to buy however the alternative given here is very expensive. Paulette goes on to explain that it was a decision the family had to take but her dad decided to purchase the medicine for his wife's benefit. Later she goes on to highlight that such a treatment is difficult to maintain if one's wage is low, however in this case she said that there was no thinking twice about it, but to buy the treatment.

As explained so far, these are instances that drive individuals into having to purchase expensive medicines for the benefit of a better health and treatment outcome as a result of restricted options offered by the government health service. As can be seen the cost can be a struggle however this will be explained in the section 7.6.2.

7.6.2 Restrictions of supply from the private sector

Restricted options and lack of supply also exist in the private sector and experiences of the participants explain the context for having to pursue sources abroad.

Kenneth needed to purchase vitamins (Vitabiotics) that were recommended by a paediatrician for his daughter while Paulette was always on the lookout for OTC medication from private pharmacies for migraine relief whenever she was abroad. In the former scenario, Kenneth purchases directly online from the manufacturing company as directed by the paediatrician as a consequence to his futile attempts at purchasing them locally. However pharmacies in Malta were not stocking these vitamins at the time. On the other hand Paulette would explore any OTC medication that could provide relief for her daughter who suffered from terrible migraine attacks and could never settle on an adequate treatment. The problem was that treatments available in Malta were not enough and none of them worked in her daughter's case.

Another participant, Lilly, explained that she regularly needs a supplement that is not available on the local market and depends on a friend to bring them over from abroad.

"Emm The only (.) the only (.) emm med it's not really a medicine its more of a supplement These are pills which basically (.) emm help emm in cases of osteoporosis but emm you get them from Switzerland and luckily enough I have somebody a friend who you know brings them over so at the moment I am not buying online" Lilly

The earlier mentioned issue of cost also came up as an obvious reason, for purchasing medicines, mainly OTCs, from pharmacies abroad.

"((pause)) emmmm, its going to sound silly imma for example, the Deep Heat. I use it a lot cause I hurt my foot. The Deep heat

patches in London are a pound, two, over here they are €6 a packet” Chloe

“So I stock on that. For example I stock also on taping for my foot. Kinesic taping here it is very expensive. There you can get it cheaper somehow irrespective of, but those are the things I would look for” Chloe

The interviewees were asked if they had bought medicines online and it was noted that the majority, such as Paulette, do not consider internet purchasing of medicines as an option. Kenneth too was categorical and said that he never purchases online except for his daughter’s vitamins which is an exception for him and because it is something his doctor recommended and he purchases them directly from the manufacturer.

On the other hand, Winston is presently living in the UK and describes his use of the Internet to which he is accustomed to, simply as an extended service of the ‘brick-and-mortar’ establishment. In fact this setup is referred to as ‘click-and-mortar’. He explains that most times he is instructed by the sales people at the counter to go online because they would be out of stock in the pharmacy. So as such the use of internet in this case is only an extension of retail pharmacy activity.

The examples given for internet purchasing through these accounts, are cases of targeted treatments and are not incidences of one’s own spontaneous initiative. Participants were asked whether they knew any relatives or friends that did so. Only Kenneth related an experience of a friend who had a typical case of counterfeit encounter with online purchasing of medication for impotence. On showing them to a health professional who was just an acquaintance, he told him that *“these are sweets and he gave him samples himself.”*

The next theme focuses on how cost of the medicine, so tightly connected to lack of local supply, affects the behaviour of the patient.

7.7 Influence of Cost

Dealing with the cost is different for different people. It depends on their financial status, their income and social background. Lilly confessed that her elderly parents do not qualify for any subsidised medicine although they are pensioners of a certain age. She does not speak about any concerns or complaints that they have about buying their medicines. In fact she gives the impression that she is not aware of the full entitlement schemes and only speaks about the mean testing subsidy. As explained in chapter 1, patients are entitled to free medication either through the Schedule II scheme (means-tested) or the Schedule V scheme (depends on condition).

Others, though they purchase medicines may be doing so despite the high cost of medication and despite the restraints on their budget. As Paulette explained, if

“a pensioner or someone who doesn’t have enough income, it is ((pause)), cause it is 130 first time and then you need it every month. First course of a month is of 130 and then from the 2nd month it will be 90. 90 a month is still a lot, for who doesn’t have allow----- aw..... “

“Le, le where health comes in, where health comes in, and when possible (.) you have to afford, you are going to get a little tight.”
Paulette

These expenses in addition to problems of supply shortcomings either on the part of the public healthcare system or on the local market contribute to patients’ desperation. It is a concern that people needing warfarin or the expensive alternative are usually older in age and would therefore be on a pension which, as claimed by several participants even in the quantitative survey of this project, provides an income that is too low to be able to keep up with such hefty expenses. The problem is that health authorities need to do a proper feasibility study comparing the use of warfarin together with all the

expenses it brings with it to monitor the patients versus spending on the expensive alternative that would avoid so much human resource energy and cost related to blood tests. It could in fact be costing the department the same or more to have patients on warfarin together with all the problems it could bring (including admissions due to erratic blood levels).

On the other hand the younger female participant, Chloe, reasoned that she would not “skinflint on health” and that she would rather trade certain luxuries (debatable necessities) such as doing her hair, so as to go for the best treatment she could get.

“I’d rather buy and buy of a better quality and it will make me feel better” Chloe

7.8 Need for options

The themes discussed so far lead one into thinking that there is a sense of continuous searching among consumers for more effective medicines or cheaper alternatives to what already exists on the local market. People search continuously be it out of despair or be it to get advantageous offers. Paulette’s daughter is always on the search both locally and abroad because her condition is one of great concern to her. She has not yet found an effective medication locally and keeps trying out other OTC alternatives from abroad on every occasion she gets. Her concern is so distressing that her relatives and friends also keep an eye for her and purchase treatment from abroad when they get the opportunity to.

What is not known in this case is whether she ever sought a doctor’s advice who may have prescribed a stronger POM medicine. However what is sure is that such patients get desperate when they do not get relief from several treatments they try. A pharmacist’s input here would be beneficial especially with monitoring the OTC purchases, although somewhat difficult when the patient ventures so much to acquire OTCs. The patient’s symptoms could be assessed in detail and the patient guided more adequately, maybe even

suggesting specialised healthcare professionals who could give more support in line with latest evidence based treatments.

“I have my daughter, she suffers a lot with migraine, and when someone goes abroad and they tell us “we found these very good for migraine” my daughter tries to buy it (.) because she suffers a lot from it and so. Even us, for example if we go abroad me and her dad, where go and we find something good for migraine, we buy them for her”

“but we find them maybe it will be a bit more strong or we see that it matches better for her, you always try”

“for example, sometimes I tell her “I got you this”, she tells me “ma, sometimes I bought that before” so there is in Malta. Some things that I got her, and I’m telling you, its not the first time” Paulette

Pain management for example is another symptom that could easily be mismanaged by patients because it can be so complex. Pain can originate from various causes however what are the options in this country? Maybe people are used to just making it go away by swallowing a tablet. Some people might not even seek the doctor’s advice on where the pain might be coming from. Some people just want the pain to go away and therefore would try anything that comes their way as described by Paulette of her husband.

“this morning someone, sure he met me and told me “these are for your husband” and I saw what they were. He gave him the voltaren to dissolve them. He tries everything. As long as he makes the pain subside.” Paulette

However again more awareness about options are needed for this type of symptom management. The case could also be that there are other options but the patient is not aware of them. Alternative medicine might be helpful in certain

types of pain or on the other hand they may be delaying the diagnosis of serious conditions. Can it be that the need for more options or the awareness of more options needs to be addressed on a national level? Maybe the pharmacist is in the right place to help here to get involved with how people can find more options.

Winston for example feels that more options are needed in that some barriers need to be removed to counteract the present situation that everything needs to be through a pharmacist. Maybe this person could be a health coach that could be aware of several roles and refers the patient to the adequate health professional. This could be a beneficial change in mentality to the classical situation where the patient goes to the doctor who is quick to prescribe conventional painkillers.

As Winston put it:

“there is more the need of tipo the source of a medicine should not always be the pharmacist I mean you can look somewhere else tipo other natural remedies if they work well

“cause there is a bit of a barrier”

The eight themes described above will be discussed in more detail in Chapter 8 and will be interpreted along side the quantitative data described earlier in Chapter 5.

Chapter 8 Discussion

This chapter will draw together the results from both quantitative and qualitative studies of this mixed method study, to provide a comprehensive picture of the issues that emerged. The conclusions will be discussed in the light of existing research.

8.1 General Picture

This research has demonstrated that the Maltese population obtains its medicines locally and has highlighted the suspicious attitude the Maltese have towards Internet purchasing of medicines because of doubts about the safety of such activity. It also emerged that many people had never actually thought about purchasing medicines online. A small proportion of the respondents (4.3%) clearly stated that they purchase or have purchased OTCs online giving details of such online purchase. These included products such as herbal remedies, food supplements and vitamins. Another 7% of the respondents reported purchasing OTCs (same type of OTCs as mentioned earlier but also painkillers) online however their responses lacked details that would confirm such practice.

This research was detailed enough to be able to obtain data about the type of medicines being bought online. In fact this research clearly shows that none of the respondents are actually purchasing POMs from the Internet at present. Only two (0.45%) respondents reported having done so in the past.

8.2 Study demographics

The survey was sent to a random sample of the population, the demographics of the respondents were compared to the Maltese population as a whole to determine how representative the sample was. It was noted that there was an

underrepresentation of men in every age group included in the study. However, this difference was not statistically significant. A quarter of the study sample were over the age of 65, however, a chi-square analysis showed that there was no significant difference between the distribution of age of the respondents in the study compared to the distribution of age in Malta. The sample can therefore be deemed to be representative of the Maltese population (with regards to age and gender).

With respect to age, the 55-64 year age group was more represented while the 18-24 year age group was under-represented among the respondents than in the actual population. One may attribute this to the fact that in general, older adults take more medicines than young people and therefore the younger age group did not see the relevance of the survey to them. This could be further supported by the fact that this age group was the group that mostly answered that they “never thought about” purchasing medicines online. This could imply that they never really needed costly treatment that might otherwise give them an incentive to consider other cheaper sources such as those available over the Internet.

However, research has shown that besides a declining general survey response rate over the past 25 years, the decline is faster among men than women and also faster in the younger age groups. One of the largest population-based health surveys ever conducted in Norway, HUNT survey, also supports these findings, revealing a significant decline in response among younger groups compared to other ages while responses from the Oslo Health Survey, HUBRO, resulted in less male participants than females.¹³⁰

With respect to region and educational status, the groups of respondents compare well with the groups found in the general population as can be seen in Table 5.1.

8.3 Trends in purchasing of medicines

The majority of respondents (76%) purchase either all or part of their medicines as can be seen in Figure 5.4 indicating that situations of out-of-pocket payment by the patient for treatment is frequent. As already described in Chapter 1, the NHS in Malta offers patients over 1300 free medicines entitled for 83 chronic conditions (Schedule V). Only those entitled through means testing (Schedule II scheme) are entitled to acute or chronic treatment and only from a limited list of medicinal products. Social security statistics show that as of March 2016, there were 21,363 beneficiaries of Schedule II entitlements.¹³¹

The current study shows that the main reason given among those that purchase medicines is that they are not entitled to get them through the NHS (see figure 5.5). In fact this supports the common knowledge that patients who need treatment for short periods and those who do not have Schedule V conditions are not entitled to free medicines. It is also shown that a large number of respondents reported that some medicines are not available on the NHS. Examples given included Deanxit® (flupentixol with melitracen indicated for a number of psychological conditions including depression) and tablets for contraception, both situations not presently covered by the NHS free treatment.

Twenty percent (n=89) of respondents reported that they do not know whether they are entitled or not to free medication and so they just purchase the medicines they need. This was affirmed through one of the interviews conducted in the qualitative study. The interviewee had explained that her elderly parents purchase all their medicines and at the same time she had the impression that obtaining medicines free from the NHS was directly related to means testing. She did not seem to be aware of the Schedule V scheme that entitles patients to free medication depending on the type of condition they suffer from. This group could include people who can afford not to bother about costs but it could also be that the system is too bureaucratic for people especially when this is for a health condition that may already be difficult enough to cope with. Other indicators were that the medicine needed is cheap when purchased privately; it is easier and quicker to just purchase; making use of the POYC scheme is too complicated.

The situation with POM medicines is that the Maltese people (87%) who need to buy medicines do so from the private pharmacies located around Malta and Gozo as seen in Table 5.4. Only four respondents stated that they had experiences of purchasing medicines from pharmacies abroad, three of whom indicated purchasing from a private pharmacy in Malta as well. One of these three respondents claimed to be reverting to purchasing from pharmacies when abroad because he can longer can purchase cetirizine (Zyrtec®) online because of restrictions. He had indicated looking for logos for reliable sites. Cetirizine is classified as an OTC in Malta.

Another respondent who had responded 'buying from a local pharmacy in Malta' in Q5, indicated to purchasing Cialis® (tadalafil) without a prescription online. This medicine is classified as a POM in Malta yet the respondent considered it as an OTC in the questionnaire. He searched for a 'professional-looking site' (Q11); reason being that it is 'cheaper than locally' (Q12) but then claimed to getting 'side effects of shaking' (Q14). Later he continued to explain that although the medicine he bought online was good, after a few months his hand started trembling and he confirmed with the patient information leaflet that it is a known side effect. However he decided to stop them and bought from the Maltese market instead and the side effects did not come back.

While 11.3% (n=51) of respondents claimed to purchasing an OTC online, one can be more confident that in reality the figure is closer to 5% since this is the number of respondents who claimed to purchasing OTCs online and continued to fill the questionnaire with details of their purchases. Of these, 13 gave reasons for purchasing medicines online, in general as requested in the questionnaire, while seven gave both reasons for purchasing online as well as not purchasing online. This distinction is being highlighted because respondents were expected to answer to either reasons for purchasing (Q12) or reasons for not purchasing (Q13) for any type of medicines ie. whether POM or OTC. Therefore, it could be that the seven respondents who answered both could mean that they made a distinction between the two types and did not consider OTCs as medicines. Perception of OTCs is discussed in the next section.

The main OTCs that these participants (13 +6) bought included glucosamine &

chondroitin preparations; vitamins and supplements; herbals such as valeriana, and L-Theanine (Appendix 4 Table 1 and 2). The most common frequency of purchase is 1-2 times a year (14 out of the 19). Most participants claimed that they choose the mostly professional looking site (9 out of 19) and choose sites from reading reviews available on the Internet eg. blogs (10 out of 19). Five out of 19 have taken recommendations from others. Four out of the 19 respondents that purchase online have claimed to choosing a registered online pharmacy for their OTC purchase.

Therefore, in conclusion, only two cases of online procurement of medicines (one classified in Malta as OTC and another as POM) as categorized in Malta emerged from this survey, although these are not current cases anymore due to restriction issues or side effects. The rest of the online purchases were for other medicinal products, herbals, vitamins and supplements.

The systematic review conducted by Orizio et al reports that in the majority of studies (mostly USA populations) the percentage of samples that bought medicines online was in the region of 6%.²³ The analysis of the HINTS 2007 survey data, reported that 14.5% of internet users bought a medication or vitamin online and identified age as a strong predictor for online purchasing of medicines and vitamins. Results showed that older adults were more likely to purchase medicine online as opposed to the 18-34 year old group. The authors also related this finding to the multiple conditions older adults could be suffering from leading to more use of medications and in turn use of more sources.⁴⁰ The study conducted in Romania on community patients revealed that 8.3% of the sample (n=253) bought medicines or medicinal products online.³⁸ Yet a larger sample (n=434) of Hungarian patients selected through community pharmacies resulted in a 6.2% who ordered medicines and supplements online. These were most likely to be educated, between the age of 30-49 years old and mostly women.

Most of the participants who bought OTCs online in the current study were also educated at the tertiary or postgraduate level, the largest group was between the age of 35-44 and gender did not seem to make a difference.

It is clearly seen that Maltese patients obtain the medicine prescribed by their doctor from the local pharmacist and therefore this confirms his/her role in the patient's treatment plan and outcome. The doctor has a large impact on the patient and his/her influence will be discussed later on in this chapter.

8.4 Distinguishing between types of medicinal products

Non-prescription medicines and medicinal products are perceived differently as already described in chapter 7. The belief of what a medicine encompasses was investigated in the qualitative study. The interviewees gave different interpretations that lead to the conclusion that individuals may not consider OTCs as medicinals and as having similar safety concerns as POMs. Some might not consider OTC medicines as medicines at all. Therefore the level of caution is different between these two groups. This could explain why a few respondents, who, after reporting that they buy or bought OTCs online, answered both to reasons for purchasing as well as reasons for not purchasing online.

Similar studies that included surveys to understand internet purchasing of medicines, referred to medicines in the broadest term. For example researchers of a survey conducted on Romanian patients admitted to including all products including medicines, medicinal products and dietary supplements as a single category due to claims that consumers may not distinguish between them.³⁸ This lack of categorisation was also a documented limitation in another study conducted by Desai et al who analysed internet buyers characteristics, however the data was from general medicine and vitamin buyers. The authors in fact explained the importance of analysing these separately, since risk factors associated with their use vary and each needs to be understood within the context of patient safety.⁴⁰ Furthermore, the local study conducted by Gatt Baldacchino on use of internet pharmacies among the Maltese public, that claimed 5% of respondents use internet for purchasing of medicines, did not differentiate between POM and OTC categories of medicines.⁸²

In comparison, the current survey was conducted on a large random sample of the general population rather than a purposive sample, making this a national survey. It also went a step further in differentiating the type of medicine purchased online. In this way a clearer picture has been revealed, and the current study can therefore say that most Maltese people who purchase online do so mainly for OTCs because of cost or availability reasons.

8.5 Attitude towards OTCs

A study conducted among German consumers regarding their perceptions of OTC drug safety revealed a 'balanced attitude' among consumers about their perception of safety of OTC medicines. They considered OTC medicines as safe in general but on the other hand did not consider them without any risk.¹²³

A study on perception of risk with OTC medicines among consumers in Italy on the other hand showed that consumers have a high awareness regarding risk with these medicines.¹³² Safety perceptions of OTCs has been also studied among the British people although their situation of OTCs could be completely different from other countries. For example in the UK, products containing codeine are available as OTCs although in 2009 tighter controls on packaging and guidance were introduced.¹³³

Participants in the present study expressed opinions that 'medicines' are considered to be those that are prescribed by the doctor. Others diversified the term, classifying 'medicines' as the "natural ones", "chemicals" and then the "more powerful ones." There was also the belief that since customers can buy a product easily over the counter such as paracetamol, then this is not considered as a 'medicine'. This diversity in opinions about OTCs may open areas for research in Malta in the same way other studies were conducted among different populations to understand their perceptions about risk with OTCs. In fact conclusions drawn from the German study expressed the need for research to understand how consumers should be supported with regard to OTC medicines.¹³⁴

Malta in this respect may be in a better position than other countries because OTCs are still being dispensed from a pharmacy. The setup in most pharmacies is such that patients cannot just pick these off the shelves and therefore they still need to be dispensed by the pharmacist. Cernasev et al. conducted 20 interviews with pharmacists working in independently owned pharmacies and the key findings included that pharmacists dedicated time to ensure the patient gets the right OTC.¹³⁵ Many pharmacies have only one pharmacist per shift¹³⁵ and therefore pharmacists could be overworked which may reduce the chances of being pharmaco-vigilant with OTCs. Therefore more research may be done both on a larger number of pharmacists and also on consumer awareness about safety of OTCs.

8.6 Is purchasing medicines a choice or necessity? Problems with medicines on the NHS formulary

Problems regarding medicines available on the NHS formulary have been reported among reasons (from a few respondents) for purchasing POM medicines privately within this current study. Patients expressed concerns about medicines on the NHS causing them side effects. One particular respondent expressed concerns with the salbutamol preparation (commonly found as Ventolin® in the private pharmacies). That available on the NHS has been reported to cause palpitations by some (survey finding) while ineffective by others (from interviews). Concerns with this particular product have been reported before. In 2009, a professor in family medicine, expressed his belief that *“those items dispensed by the government are not always up to the standard of those that you buy”* and that some of the generics the government buys, while their cheap cost allows for more medicines to be bought on the government formulary, are in fact *“the generics of the generics and not worth the box they come in.”* This same report had mentioned salbutamol dispensed by the NHS at that time as being an aerosol that does not contain the stated amount of puffs and also had poor aerosol delivery.¹³⁶

A qualitative study conducted on GPs in Ireland, about their perceptions of generic medicines, concluded various personal beliefs however almost all of them reported receiving complaints from patients about generics, a third of which were about increased or altered side effects.¹³⁷ Patients express their beliefs about medicines in various ways. Adverse effects and attribution of adverse effects constitute concerns patients have that eventually leads to effect in adherence.¹³⁸ This was manifested in a study, HAART study, where the reported low adherence of the participants was related to their concerns about adverse effects and how each individual balanced these against perceptions of what they think is necessary.¹³⁹

In the case illustrated in the current study, 'palpitations' is a documented side effect with this type of medication (rapid-acting beta-2 agonist) and therefore the patient's perception of the side effect as being an issue could well be a different reality. The dose may need to be monitored, or perhaps a different brand chosen to see whether brand variance may be the problem. A systematic review published in 2015, has had a look at perceptions among doctors, pharmacists and lay people. It concluded that lay people view generics as being less efficacious than branded medicines while the doctors believed that generics cause more side effects than the branded equivalent.

Besides concerns on side effects, two interviewees expressed different problems with regards to salbutamol preparations available on the NHS formulary. They stated that the rapid-acting beta-2 agonist (salbutamol) available on the NHS is not satisfactory for some patients suffering from respiratory conditions. Both interviewees, while aware that preparations are available for their free consumption, do not take them because they require a more efficient formulation, turbobaler, that consists of a dry powder and not a metered dose inhaler as found on the NHS.

Inhalers are found in various formulations and patients may need to try various types before settling to the appropriate preparation for the patient. Dry powders as used by these participants have the advantage of not containing propellants and moreover do not need coordination between actuation and breathing. The NHS provides medicines that are the "cheapest compliant with specifications"

offers submitted by economic operators. This may mean that some patients may not benefit from such a choice since it might not be the better preparation offering the best outcome for them.

Such instances point to the importance of patient involvement and feedback about the medicines they are supplied with. The involvement of patients' organisations was a key recommendation by the European Association of Hospital pharmacists on the topic of medicines shortages and has been highlighted as an important factor in a study conducted in Malta about medicines wastage.¹⁴⁰ Furthermore, self-empowerment is among one of the actions needed for policy generation as identified in the Health 2020 Strategy which in turn feeds Malta's National Health System Strategy 2014-2020 (NHSS).

The Health 2020 Strategy is built on four priority areas in the European health policy framework as approved at the session of the WHO Regional Committee for Europe in September 2012. Among these 4 areas, is the policy action aimed at 'creating resilient communities and supportive environments.'¹⁴¹ The Health 2020 policy links people's health chances to situations in which individuals are born, grow, work and age. It insists upon the importance of assessing effects of a rapidly changing environment and mentions technology as one of such environments that needs to be monitored with regards to ensuring health benefits. It goes on to suggest that this can be done through various strategic implementations, one of which is having 'resilient and empowered communities' that may subsequently show positive responses to challenging situations. This may be manifested through one's belief of self- empowerment through one's own assets, supported by external structures.

Malta Health Network (MHN) is an independent organisation that liaises with several local and international organisations, and patient groups to promote patients' rights and their well-being within the wide community. Therefore with such a structure in place, one can build on this and recommend practices that may better the quality of medicines that are available for the patients. A system could be devised to have a reporting structure where patients' comments are taken seriously and investigated through such networks. Following the

necessary research and evidence, such information could be acted upon by the health authorities responsible for managing the government formulary. This could in turn have a dual effect on the patient who would not need to go through the expense of buying products because the formulary item they are entitled to may not be effective as well as on the public expenditure. The impact on the latter could be that medicines may go to waste either directly or because the patient's condition could deteriorate, resulting in more care and hence incurring more costs on the national health service.

8.7 Characteristics needed for satisfactory supply of medicines

People look at certain criteria when considering where to purchase their medicines from that include speed, quality, price, large selection.³⁸ Safety was the main reason many respondents in this study gave for not purchasing medicines online. The main responses in fact were that people have safety concerns and either do not think it is safe (n=182) or do not want to risk buying medicines online when these might be classified as POM in Malta (n=130). Since respondents were allowed to tick more than one option, these cannot be represented as percentages of the respondents. However, it is clear that safety emerged as the strongest reason for Maltese people to not purchase medicines online. While speed could be an important factor in large countries where people have difficulties to acquire medicines quickly, in Malta, pharmacies are found all round the island and stock can therefore be easily purchased. Even if one requires a prescription, this can easily be obtained from the many family doctors who work at clinics within the pharmacies themselves. In fact, 50 respondents ticked 'needing stock immediately' as a reason for not purchasing medicines online. Another option that was highlighted by 65 respondents was the concept of ensuring the quality of medicines that was their choice for not purchasing medicines online.

Only 19 respondents gave reasons for purchasing products online (the same 19 respondents mentioned earlier). Of these, 11 claimed to buying OTCs because they are cheaper than the product available locally, such as glucosamine and

chondroitin preparations, lecithin, minoxidil, vitamin B complex, some types of vitamins and supplements. In the case of minoxidil, it is also an issue of more convenience that could be related to embarrassment to purchase from the local pharmacy in Malta where privacy may be an issue. Another six claimed that the product they needed to purchase was not available locally. Such products were L-Theanine, lactase tablets, valeriana complex, vitamins (Well kids), Nurofen migraine, and tomato natural supplement.

Unlike the current scenario, convenience is one of the most regularly communicated benefits reported by Fittler et al. However convenience may mean different circumstances for different people. For example Fittler et al. mention flexible access, comparable prices and lack of the personal touch as factors that define convenience as seen by patients. Mazer's study in Emergency Department patients in Pennsylvania reported 66% convenience as the highest reason followed by cost at 40%. In Malta's case, the scenario may be a little different. In fact only 3 participants chose the option of convenience as a reason for purchasing products (namely OTCs) from the Internet.

Until now pharmacies in Malta do not deliver medicines on a door-to-door basis unless medicines need to be delivered through the POYC scheme only to the elderly population who apply for the scheme. Therefore, anything bought from a pharmacy in Malta needs to be done so in person. Despite this, convenience in Malta lies in the very fact that the island is small and has 219 pharmacies distributed across the population areas. This means an average of 3-4 pharmacies in each locality in Malta. There could remain the fact that the lack of personal communication in the pharmacy could be perceived as a convenient matter. Only one participant though answered that he purchased online to avoid embarrassment of speaking about his problem and to avoid speaking to his pharmacist. This issue has not been reported at all among the comments and the free text section of the questionnaire. A study conducted by Wirth et al in Malta and published in 2010 had identified dissatisfaction of consumers with privacy in the pharmacy.¹ However this topic did not come up at all as a reason for purchasing medicines online except for that one participant.

The scenario being depicted for Malta is that safety is something the Maltese want as a guarantee before taking their medicines. This issue is discussed in further detail here below.

8.8 Caution as a trait among Maltese

The study shed light on the cautious behaviour among the Maltese population. This was manifested in the claim that practically no respondents purchase POMs online together with the most common reasons selected of “do not think it is safe” and “do not want to risk buying medicines from the Internet which are POM in Malta.” Furthermore, 41% think that a problem can happen with purchasing a medicine online while it should also be pointed out that 37% left the question out indicating their uncertainty about this possibility. The belief of safety is linked to the people’s trust primarily in their doctor as shown by 92% of respondents. Prescription medicines prescribed by the doctor are in fact bought from local pharmacies in Malta as revealed by the results of this study. Therefore it is obvious that what the doctor prescribes to the patient is not considered by the general public through other routes other than the local pharmacy in Malta.

Doctors have a large influence on the opinion of the Maltese population with regard to their access to medicines. This in turn could also be influenced by several other issues on the part of doctors and what they think of online purchasing of medicines. Further research could be warranted to investigate such discussions between patients and their doctors and on whether doctors in particular think there is a niche for online purchasing of medicines among their patients.

Gatt Baldacchino et al shed some light on this. Their study revealed that half of the fifty-nine responses received from Maltese physicians about the use of internet pharmacies, were in favour if the source was reliable because of the very reasons that emerged in the current study, i.e. that of cheaper options, to solve availability issues locally, and to provide wider choices for the patients.⁸²

Others were not in agreement with using internet pharmacy because patients will not get the advice they would get from a brick-and-mortar pharmacy.⁸²

This concept of doctors' influence on patients' healthcare decisions has been investigated through the interviews within the current study. As opposed to the general finding that emerged in the quantitative study, i.e. that people trust their doctor mostly for advice, there were also respondents in the qualitative interviews who prefer to get a second opinion to that of their doctor while others like to discuss treatment options at length with both their doctor and pharmacist.

The pharmacist in Malta has a lot of control over medicines be they POM or OTC. As already described, the setup of the pharmacies in Malta is in such a way that OTCs are under general control of the pharmacist. The consumer's perception of the pharmacist has been studied before in Malta and it was revealed that majority of patients would first consult the physician for health advice and only rely on the community pharmacist's choice when purchasing a non-prescription medication or for minor ailments such as cough or constipation.¹ Similarly to Malta, minor illnesses are seen to by community pharmacists in the UK, while among a sample of the Scottish public, it was reported that less than 10% of a sample of the general public considered the pharmacist to be the 'first person for advice on health problems'. On the other hand, in Canada, pharmacists and physicians were equally considered as the 'go-to- resources' for health information.¹ In Malta, the doctor is considered to be the most trustworthy source of advice, however about half of the respondents deem pharmacists also as an important source and is therefore in an influential position to be able to give correct guidance.

Safety might not mean necessarily that one should avoid Internet purchasing of medicines. Education has emerged as an important determinant that could contribute to the safe use of the Internet for the purpose of purchasing medicines. This was seen in the test of association done between education and the opinion of whether problems can happen with Internet purchasing of medicines. The group in the post-secondary education level who claimed it to be 'unlikely' (n=21) were three times more than those in the secondary level (n=5). These individuals further explained that they either "buy from a registered

online pharmacy” or “trust the website” or just “don’t think there is a real problem.” This group of individuals who think it ‘unlikely’ though small, are still an important revelation because the association reveals that the more one may be informed and educated about the topic, the more one could be aware about where he or she is purchasing from in a safe manner just the same.

The fact that the majority of individuals declared that they are aware of counterfeit medicines online is a further understanding that most people are aware of what is offered on the internet and therefore the message that needs to be conveyed is that education needs to be targeted at different levels in an effective way. This in turn will be keeping the consumer alert and responsible for their decision about access to quality and safe sourcing of medicines.

8.9 Possibility of future internet purchasing

The picture portrayed so far would not be complete unless one looks at how the figures can change in the future. There were 13% that responded that they might consider internet purchasing in the future. Twenty-one (21%) percent said that they were not aware they could purchase online or said that they do not know how. Twenty-five (25%) percent never thought about it. When comparing these percentages with those of studies conducted on Hungarian hospital patients and another on Romanian consumers, one can appreciate the much lower number of similar groups; in the Hungarian study, 3.6% considered purchasing medicines or supplements in the near future while 6.7% had never heard about it; in the Romanian study, 7.11% intended to purchase medicines or medicinal products in the future while 3.16% had not heard about the possibility.

Thirteen percent (13%) is a much higher percentage of people in the current study (when compared to the other studies) that said they might consider purchasing medicines in the future. All in all, these groups could be possible future internet consumers of medicines; these figures need to be taken into consideration when planning educational needs about such a practice for the population.

8.10 Limitations

Some respondents were not clear in their responses and therefore one needs to consider health literacy issues. As already stated before, some of the respondents who claimed that they purchased a POM or OTC online also gave reasons for not purchasing medicines online. This could be either because of confusion in categorisation of medicines as POM or OTC, as highlighted in the Romanian study³⁸ or they may have misread or ignored the wording of the question.

There is also the case of elderly people filling in such surveys. For example, a 78 year old male answered that he purchased an OTC online yet later claimed that 'I am not aware that I could buy medicines from the internet', 'I never thought about it' and 'I do not know how to go about it'.

Participants who reply to questionnaires undergo a sequence of cognitive processes. These include, understanding the intent of the question, memory searching for the answer, making a judgment about the adequacy of the memory recalled and finally integrating the whole process into a response. The process may be complex and each of the steps mentioned have their subdivision of their own processes. So between reading the question and actually selecting an answer, so many processes go on in the brain that while the answer is being formulated the original words of the question may be lost along the way.¹⁴² Therefore there is a cumulative effort needed on the part of the participant to be able to answer substantial lengthy questionnaires. This needs to be considered in addition to other factors that motivate people to completing questionnaires such as desire to contribute to research, altruism and opportunities for self-expression.

These limitations shed light on the complexity in designing a questionnaire that aims to capture the data required by the researcher. The difficulty is that the researcher who is setting the questions is coming from a different background than that of the patients or respondents. Besides, there is also the variability between the respondents.

Ensuring uniform understanding of questions in a self-completion questionnaire has been referred to in other studies such as that of Pflieger et al. In their study, about pharmaceutical public health, uniform interpretation was a concern although respondents were health professionals, ie. pharmacists. The authors concluded that in such types of research, methodologies may be chosen to allow for *“further explanation of terms and concepts which respondents find difficult to understand.”*¹⁴³ ‘Questerviews’ for example may provide a standard set of questions that act as a trigger for in-depth responses during interviews and these are audio-taped.¹⁴⁴ Such a multi-method approach can be ideal to explore complex issues and definitions that are not so straightforward to answer with a yes or a no answer. Such an approach could also address the health literacy issue that may be a concern among individuals especially because of the very limitations mentioned in other studies where categorisation of medicines was not done because respondents find it difficult to distinguish between POM or OTC.

Other limitations were noticed during analysis of the data of the questionnaire. For example, question 13 was aimed at respondents who claimed that they do not purchase any type of medicines online. It gave a number of options and therefore people chose what is applicable to them. Since the list of options was quite long, it is expected that people would not necessarily tick all options that apply to them and therefore eg. “I never thought about it” might be applicable to a younger group as in this case while older people may not have chosen the option just because there were other more relevant ones such as “I do not think it is safe”. It could also be that the under 34 years of age have not thought about it because they do not need medicines at all and therefore never connected internet purchasing of medicinal products with internet purchasing although they do so with so many other things. Therefore, similar options could each have a ‘yes’ and a ‘no’ entry for each so that the respondent will be sure to have considered each option equally.

8.11 Recommendations & Further research

Chapter 2 discussed the difficulties with regulating internet sites. Regulation is practically impossible due to the nature of the Internet and therefore this can result in illegal business selling products claimed to be medicines to internet consumers. Therefore as many studies have concluded, it is the consumer or patient that must be educated and empowered to be able to take the best decisions concerning their medicines and their health. Education should be ongoing with any health-related topics. As also indicated by some respondents, communicating knowledge related to medicines seems to be welcomed by consumers of medicines. Based on the earlier notion that patients need to be empowered, one may look into methods and patient group organisations where continuing education together with documented material can be designed to help individuals decide about their options regarding treatment that may not be available on the local market.

Adding the concept of asking about medicines bought online during patient history taking is also another step in acknowledging the existence of possible harms patients may encounter and being proactive by including such interrogations as part of routine medical practice. This concept was suggested by Fittler et al as a screening plan recommendation following the study they conducted on behaviours of patients who purchase medicines on the internet.³⁶ This concept needs to be educated to the health professionals involved with monitoring their patients' treatment outcomes. Therefore, a plan could be devised that could include a template with a set of relevant questions the health professional could use when asking patients about their medicines. History-taking templates could be amended to include such information about possible consumption of medicines obtained online. This may be important when trying to understand symptoms that may be attributed to side effects of any type of products whether obtained locally or from foreign sources.

A similar research study could be undertaken on a younger age group since the present study included participants of 18 years of age and older. Risks in the younger age group could pose different type of concerns. Also the topic in itself is current and dynamic especially when youths are involved. For example, only

recently did the BBC in the UK podcast a programme discussing a recent phenomenon of young people misusing Xanax[®] (alprazolam used to treat anxiety and panic disorders) bought illegally through the Internet, especially social media websites. The experts explained that quite a few cases of such youths ended in hospital over the past 12 months and therefore it has brought attention for the need for investigation and research.¹⁴⁵ This is an important research topic that could also be researched among the Maltese youths. Just like other youths, Maltese youths live through stressful family and student lives. Furthermore there is an increasing awareness about mental health wellbeing in Malta. Research in this area could add data to the knowledge that is being used to support and understand youths especially when these find themselves in very stressful circumstances in their life.

As mentioned earlier in the discussion, further research could be undertaken specifically on OTCs and the safety index of the Maltese population. This could be completed with consumers as well as pharmacists. As addressed earlier, research can target the awareness level regarding safety of OTCs among the pharmacists and what type of information do they transmit to the consumer about such products.

8.12 Reflexivity: Being a researcher

As expected from a quantitative researcher it was particularly hard to remove all emotional feelings⁸⁵ and the apprehension that the empirical analysis of the results might not give the same impression I may have built while reading the participants' feedback from the filled questionnaires. This concern was discussed several times with my tutors. I was reassured that the quantitative approach is in fact the very analysis of numbers without the meaning behind why and what actually drove that particular participant to answer in that way. I also had to come to terms with the fact that I have to accept and work around the fact that some respondents will not necessarily answer the questionnaire in the way that I expected them to. This is where I so treasured the value of pilot studies and how important they are for the preparation of the tool,

questionnaire, for the actual collection of data. I came to also appreciate the very studies people do just on pilots, something that I used to consider of less importance to other types of projects.

The revelation that quantitative research does not come naturally to me, strengthened the very reason why a mixed methods paradigm is so important. Due to one's own reservations about the actual results that emerge from the quantitative data that needs to be seen objectively without the intrusion of one's interpretation, the constructivist element is important to explain why certain reservations exist on the part of the researcher.

The feedback I got from about one-third of the participants (Appendix 5) showed that they needed to express their concerns and problems related to this topic. It was definitely encouraging to get the feel that the Maltese population are generally quite willing to share their experiences and in fact quite a few wished me the best for the research and expressed their appreciation for researchers that bother to take an interest in the care of the patients. These comments inspired me tremendously both because I was confirming the suitability and need for my research and also highlighted the desperate need for research that listens to the patients' needs and experiences. A lot more qualitative research is definitely needed and several topics related to health can be explained through the patients' perspective.

The two approaches need to strike a compatible balance for the generation of reliable evidence because that is the only way policy makers and decision-makers make the necessary changes in the country.

I enjoyed particularly the unveiling experience of how the themes emerged in the thematic analysis of the qualitative study. After the experience of such a frustrating transcription process, I finally got to see the fruits of such hard work. I enjoyed, in particular, the informal writing process and a more empathic description than what goes on in the quantitative reports. This is in accordance to what qualitative purists such as Guba thrived for.⁸⁵

This experience particularly taught me how important it is to keep my own opinion completely independent of the data being collected and only to interpret

carefully after a lot of thought and in-depth reading. I appreciate how easy it is for one to impose one's beliefs and opinions and not be objective when interpreting the results. My case in point here is that I had started off with the very belief that medicines should not be bought online. However, although in effect it seems that the results from my project are in fact supporting this perspective, I have also come to appreciate other perspectives. Due to our small market and as long as purchasing medicines online is done responsibly and from reputable, reliable sources, it could also be a life-saver in some situations.

I treasure the experiences that were communicated to me and I admired my participants' frankness and altruism in wanting to participate in healthcare research. Although some experiences may belong to only a small percentage of the population, concerns may be serious enough to warrant attention and amend policies to better the health service for the patient. Today it could be an issue that affects only a few, however if nothing is done to arrange their situation, similar patterns may be seen in other areas too and this could lead to accumulation of such problems.

As Dr Tania von Avendock, a popular and loved Maltese family doctor who has recently lost her life to a terrible illness, expressed her experiences through the eyes of a patient and warned her colleagues of the difference they can make in people's lives by being more qualitative than quantitative:

"Perhaps we should try and put aside statistics sometimes and give more personalised, individualistic care.

As long as there is life, there is hope. So what if I only have a two per cent chance of survival? I can be that two per cent! I can turn it around!"¹⁴⁶

8.13 Conclusion

This survey has depicted the Maltese population as being very cautious about the risks that may be associated with internet purchasing of medicines. While none of the respondents in this study reported to purchasing POMs presently, there were 4.3% that gave detailed information about their OTC online purchases, that included medicinal products, herbals, vitamins and supplements. These customers were mainly educated at the tertiary or higher level and between the age of 35-44. The majority of the respondents (87%) responded that they purchase POMs from a private pharmacy in Malta. Three respondents also purchase from pharmacies while abroad.

These results were not easy to compare with other research since the study had two elements to it that were completely different to other studies that were conducted in other countries. The first is that the sample of participants was obtained randomly from the best sampling frame possible, that of the electoral register, and the second is the detail with which the study was designed to distinguish POMs from OTCs so that specific data was targeted. This latter factor is remarkable and adds significant value to this research. Previous studies did not differentiate between medicines' categories and therefore knowledge about the types of medicinal products being purchased online was lacking. This study clarified that purchases being conducted online are for OTC products. Purchasing POMs was done sparingly and in the past.

The study also showed that there is a large number of respondents who never thought about purchasing medicines online while another substantial group (when compared to other studies), might consider it in the future. This may also be seen hand in hand with people's need for more options both on the NHS formulary as well as on the local market. Therefore, with the potential for more people purchasing in the future, they need be kept up to date with online medicinal purchasing issues so that they may be in an informed position to better evaluate and decide how best to obtain their medicines.

Although it seems that pharmacy businesses in Malta are not imminently threatened by online businesses, it is time for the concept of purchasing

medicines online to be acknowledged as a reality even in Malta. This is in view of the fact that 13% of respondents claimed that they might consider online purchasing of medicines in the future. There may be a niche for online pharmacies to be setup and operate in Malta. This would necessitate a regulatory update of existing legislation that currently does not cater for online pharmacies. Such initiatives may result in a more efficient service to the patient since an online pharmacy can then meet the demands of a wider population distribution. Also a setup of supply-within-the-day service can mean that the patient will not have to wait for the pharmacy to order from the supplier and pick it up later in the week but on the contrary the order may be dealt with directly from the supplier to the patient through a regulated online pharmacy.

Effective educational programs for various groups should be devised through the health promotion department and non-governmental organisations (NGOs). The aim of such programs would be to keep the public and health professionals aware of the problems that may arise with internet purchasing but also to educate with the choice of sites in the eventuality that consumers may still want to venture such a route. Such programs may be conducted by pharmacists that do not have a conflict of interest and who can liaise with the public health promotion officials for their deliverance.

Further measures such as detailed history taking, by doctors and pharmacists that are at the first interphase with the patient, should also be conducted to reflect internet purchases by the patient. Acknowledgment of this reality would allow individuals to weigh the advantages and disadvantages of such practices with the aim of obtaining the safest option for the best treatment outcome.

As discussed in section 8.3, Maltese patients obtain medicines prescribed by their doctor from the 'brick-and-mortar' pharmacy. This establishes the pharmacist as a vital role within the patient's treatment plan and outcome. The pharmacist is seen as an important professional that is trusted by the patient and therefore is in an important place within healthcare to help the patient. The pharmacist's input with monitoring OTC purchases and referrals to specialists or services benefits the patient who many times is vulnerable and unaware of treatment possibilities around him/her.

The recommendations from the current study focuses mainly on educating the customers that may be contemplating the use of the Internet for purchasing their medicines. Section 8.6 has discussed how education programme plans could be delivered through various entities. This together with the pharmacist's daily role with educating the customer more directly, are ways that 'create resilient communities and supportive communities'¹⁴¹ with the aim of inspiring self-empowerment as suggested by the Health 2020 Strategy.

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APPENDIX 1 Ethics Approvals

Department of
Pharmacy &
Pharmacology



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Dear Sir or Madam,

RE: University of Bath Research Ethics Approval of Corinne Bowman's proposed research

I am writing to confirm that Corinne Bowman, who I am the principal supervisor for at the University of Bath, has received ethical approval from the University of Bath Research Ethics Approval Committee for Health (REACH) (ethical approval reference: EP 16/17 032).

Before giving their final approval the committee requested that Corinne made some minor wording changes to the study documents which do not affect the scientific rationale or methods for the study. However were intended to ensure clear and understandable information for participants. The amended documents, and the email trail between Corinne and Emma Dowden, the administrator for the ethics committee is attached. In these emails it can be seen what changes were requested and details of how and where Corinne has addressed these points. The updated study documents are also attached for your reference.

Should you require any further information before you give your final approval for the study to take place, please contact Corinne, or myself (my contact details are below).

Kind Regards,

Dr Hannah Family CPsychol, FHEA, PhD, MSc, BSc
Research Fellow

Telephone: [REDACTED]
e-mail: h.e.family@bath.ac.uk



Gmail

Corinne Bowman <[REDACTED]>

Amendments as per highlighted

Emma Dowden <E.Dowden@bath.ac.uk>

Thu, Nov 17, 2016 at 11:16 AM

To: Corinne Bowman [REDACTED]

Cc: Hannah Family [REDACTED]

Dear Corinne,

Thank you for providing your updated information sheet/consent for and responding to the queries raised by REACH.

I can confirm that this has been reviewed by the Committee and approved by REACH on the basis that work on the project will not begin before approval is received from Malta ethics committee.

Please inform REACH of any substantial changes to your study that will have ethical implications.

Best Wishes,

Emma

From: Corinne Bowman [mailto:[REDACTED]] **Sent:** 16 November 2016 20:15 **To:** Emma Dowden <E.Dowden@bath.ac.uk> **Cc:** Hannah Family [REDACTED] **Subject:** Amendments as per highlighted

Dear Emma

[Quoted text hidden]



Gmail

Corinne Bowman <[REDACTED]>

Ethics application Corinne Bowman

Helen Grech <[REDACTED]>

Mon, Dec 5, 2016 at 10:50 AM

To: Corinne Bowman [REDACTED]

Cc: University Research Ethics Committee <research-ethics.committee@um.edu.mt>, Hannah Family [REDACTED], Maria Cordina [REDACTED], Hugo Agius Muscat [REDACTED]

Dear Ms Bowman,

Thank you for forwarding the requested documentation.

I am pleased to inform you that your proposal has been approved by UREC.

Good luck with the study.

Sincerely,

Helen Grech

Professor Helen Grech

Chairperson, University Research Ethics Committee

Head, Department of Communication Therapy

Deputy Dean, Faculty of Health Sciences

University of Malta, MSD 2090

Tel: +356 2340 1858

[Quoted text hidden]

APPENDIX 2 Questionnaire Design



UNIVERSITY OF MALTA
L-Università ta' Malta

Where do you buy your medicines from? Minn fejn tixtri l-medicini tiegħek?

Dear respondent

*(if you have a carer taking care of your medication,
she/he can respond on your behalf)*

We would like to invite you to participate in a doctorate study that seeks to determine the manner in which Maltese residents acquire their medication. You have been randomly selected to be part of a representative sample of the Maltese population.

Your participation will help us understand how and from where the public purchases medicines, and to highlight any problems that are encountered in obtaining medicines in Malta and to suggest improvements in this respect.

Completing this questionnaire takes about **10 minutes**. Your participation is entirely voluntary, your answers confidential and your response anonymous (do not put your name on this questionnaire).

If you have any questions or concerns, please feel free to contact me, the researcher at C.Bowman@bath.ac.uk or on 7905 4233 Mon-Fri between 9am-1pm.

If you are interested in the results and outcome of this research you are welcome to send me an email so that I can update you at a later stage.

Kindly return the filled in questionnaire using the FREEPOST envelope provided by not later than **31st March 2017**. Please answer all the questions.

If you are willing to leave a telephone number (on page 8) you will be eligible to a draw of this anonymous number for an **€80 postal voucher**. The winner will be contacted on the winning phone number to instruct where to send the voucher.

Għażiż/a resident

*(Jekk għandek 'carer' tiegħu hseib tal-medikazzjoni tiegħek,
hi / hu jista' jirrispondi għan-nom tiegħek)*

Nixtiequ nistidnuk biex tippartecipa fi studju ta' dottorat li huwa maħsub sabiex jiddetermina l-mod li bih ir-residenti Maltin jakkwistaw il-medicini tagħhom. Intgħażilt b'mod każwali biex tkun parti minn kampjun rappreżentativ tal-populazzjoni Maltija.

Il-partecipazzjoni tiegħek se tgħinna nifhemu kif u minn fejn il-pubbliku jixtri l-medicini u biex nifhemu xi problemi jinstabu fil-ksib tal-medicini f'Malta u nsibu mod kif intejbu s-sistema.

Dan il-kwestjonarju se jiehu madwar **10 minuti**. Il-partecipazzjoni tiegħek hija għal kollox volontarja, t-tweġibiet tiegħek ikunu kunfidenzjali u r-rispons anonimu (tniżżilx ismek fuq dan il-kwestjonarju).

Jekk ikollok xi mistoqsijiet jew tħassib, tista' tikkuntattjani, ir-riċerkatur, fuq C.Bowman@bath.ac.uk jew fuq 79054233 mit-Tnejn sal-Gimgha bejn 9am u 1pm.

Jekk inti interessat/a fir-riżultati u l-frott ta' din ir-riċerka tista' tibgħatli email halli nkun nista' nagħgornak aktar tard.

Gentilment irritorna l-kwestjonarju mimli fl-envelop (FREEPOST) pprovdut, li jgħaddi b'xejn mill-posta, sa mhux aktar tard mit-**31 ta' Marzu 2017**. Jekk jogħġbok wiegħeb il-mistoqsijiet kollha.

Jekk int lest/a thalli n-numru tat-telefown (f'paġna 8), tkun eligibbli biex dan in-numru anonimu jidhol f'lotterija biex tirbaħ **vawċer postali ta' €80**. Ir-rebbieh jigi kkuntattjat fuq in-numru tat-telefown li telgħa biex jgħidilna fejn jixtieqna nibagħtulu l-vawċer.

Researcher
Riċerkatur

Corinne Bowman

Supervisors
Supervizuri

Dr Hannah Family
Principal supervisor, Dept of Pharmacy & Pharmacology, University of Bath

Dr Hugo Agius Muscat
Consultant Public Health, Health Information Management Unit, Practice-based supervisor

Prof Maria Cordina
Dept Clinical Pharmacology and Therapeutics, University of Malta, Practice-based supervisor

English

The following questions are about prescription-only medicines (POM). These require a prescription from a doctor.

1. Have you or anyone under your care ever took any prescription-only medicines?
(Leave out vitamins, supplements and herbal medicines)

(choose one or more answers)

- ☐ Yes, for me, for a long-term condition or illness
☐ Yes, for someone else, for a long-term condition or illness, specify who _____
☐ Yes, for me, for a short period of time
☐ Yes, for someone else, for a short period of time, specify who _____
☐ No (if No, go to question 9)

2. Where do you obtain prescription-only medicines, for yourself or anyone under your care, from?

(choose only one answer)

- ☐ a. I get them all free from the government health system
☐ b. I get some free from government health system and I buy some
☐ c. I buy all of them
☐ d. Other, specify _____

3. I buy prescription-only medicines because:

(choose one or more answer)

- ☐ a. they are not available on the government health system
☐ b. I am not entitled to get them free from the government health system
☐ c. I do not know whether I can get them free from the government health system and so I just buy them
☐ d. the medicine is not available in Malta
☐ e. Other, specify _____

4. If you buy prescription-only medicines, how many have you bought over the past 12 months?

Number of medicines	Once or twice	3-4 times	Monthly
1-2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3-5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More than 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Malti

Il-mistoqsijiet li ġejjin huma dwar mediċini bir-riċetta. Dawn jehtieġu riċetta mit-tabib.

1. Inti jew xi hadd taht il-kura tiegħek, qatt hadtu mediċina bir-riċetta?

(halli barra vitamini, supplimenti u mediċini erbali)

(aġġel risposta waħda jew aktar)

- ☐ Iva, għaliya, għall-kundizzjoni jew mard fit-tul
☐ Iva, għal haddiehor taht il-kura tiegħi, għall-kundizzjoni jew mard fit-tul, specifika għal minn _____
☐ Iva, għaliya, għal perjodu ta' żmien qasir
☐ Iva, għal haddiehor taht il-kura tiegħi, għal perjodu ta' żmien qasir, specifika għal minn _____
☐ Le (jekk le, mur għall-mistoqsija 9)

2. Minn fejn tikseb il-mediċini bir-riċetta, għalik jew xi hadd taht il-kura tiegħek?

(aġġel risposta waħda biss)

- ☐ a. Kollha b'xejn mis-sistema tas-saħħa tal-gvern
☐ b. Ftit minnhom biss b'xejn mis-sistema tas-saħħa tal-gvern u ftit nixtrihom
☐ c. Nixtrihom kollha
☐ d. Oħra, specifika _____

3. Nixtri mediċini bir-riċetta minhabba li:

(aġġel risposta waħda biss)

- ☐ a. dawn ma jinstabux fuq is-sistema tas-saħħa tal-gvern
☐ b. minix intitolat li neħodhom b'xejn mis-sistema tas-saħħa tal-gvern
☐ c. ma nafx jekk nistax neħodhom b'xejn mis-sistema tas-saħħa tal-gvern allura nixtrihom
☐ d. il-mediċina ma tinstabx f'Malta
☐ e. oħra, specifika _____

4. Jekk inti tixtri mediċini bir-riċetta, kemm xtrajt matul l-aħħar 12-il xahar?

Numru ta' mediċini	Darba jew darbtejn	3-4 darbiet	Kull xahar
1-2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3-5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aktar minn 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. If you buy any prescription-only medicines for yourself or anyone under your care, where do you buy them from?

(choose one or more answers)

- ☐ a. From a private pharmacy in Malta
☐ b. From a hospital pharmacy in Malta (private or public)
☐ c. From an online registered pharmacy, (see note * below) against the request of a prescription
☐ d. From an online registered pharmacy which does not request a prescription
☐ e. From an Internet website (not an online pharmacy which is regulated and registered)
☐ f. From a pharmacy abroad directly or through relatives or friends

*Note: An online registered pharmacy is a pharmacy that operates through the internet.

(If you answered a or b only, go to question 9)

5. Jekk inti tixtri xi mediċini bir-riċetta għalik jew għal xi hadd taħt il-kura tiegħek, minn fejn tixtrihom?

(aġġiel risposta waħda jew aktar)

- ☐ a. Minn spiżerija privata f'Malta
☐ b. Minn spiżerija ta' sptar pubbliku jew privat f'Malta
☐ c. Minn spiżerija online registrata (ara nota * hawn taħt) bit-talba ta' riċetta
☐ d. Minn spiżerija online registrata mingħajr it-talba ta' riċetta
☐ e. Minn websajt tal-Internet (minbarra spiżerija "online" li hija regolata u registrata
☐ f. Minn barra minn Malta direttament jew permezz ta' qrafa jew ħbieb

* Nota: Spiżerija registrata online hija spiżerija li topera permezz tal-Internet.

(Jekk irrispondejt a jew b, mur għal-mistoqsija 9)

6. If you bought any prescription-only medicines online for yourself or anyone under your care, name them here below.

6. Jekk xtrajt xi mediċini bir-riċetta online għalik jew għal xi hadd taħt il-kura tiegħek, semihom hawn taħt.

Name of medicine
 (If in doubt,
 say what you use it for)

Isem tal-mediċina
 (Jekk ikollok xi dubju,
 għid għalxiex tużah)

Did the online
 pharmacy/website
 require a prescription
 for this medicine?

Din l-ispjżerija "online"/
 websajt irrikjediet riċetta
 għal din il-mediċina?

How often do you buy
 this medicine online?
 Kemm-il darba inti tixtri
 online din il-mediċina?

Yes
 Iva

No
 Le

Always
 Dejjem
 Frequently
 Spiss
 Occasionally
 Kultant

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Who recommended buying these medicines (mentioned in question 6) over the internet?

(choose one or more answers)

- ☐ Doctor
☐ Other healthcare professional
☐ Friend
☐ Personal decision
☐ Pharmacist
☐ Other patient
☐ Family member

7. Min irakkomanda x-xiri ta' dawn il-mediċini (imsemmija f'mistoqsija 6) fuq l-Internet?

(aġġiel risposta waħda jew aktar)

- ☐ Tabib
☐ Professionist ieħor tas-saħħa
☐ Ħabib/a
☐ Deċiżjoni personali
☐ Spiżjar
☐ Pazjent ieħor
☐ Membru tal-familja

8. Did your doctor in Malta give you a prescription for the online purchase?

☐ Yes
☐ No
☐ Other, please specify _____

The following questions are about 'over-the-counter' (OTC) medicines. These do not require a prescription and include dietary supplements such as vitamins & minerals, herbs (eg. ginseng) and products that come from a natural source (eg. omega-3, glucosamine).

(If you do not buy any type of medicine online, go to question 13)

9. Did you ever buy over-the-counter medicines from the internet?

☐ Yes for me, specify name of medicine _____

☐ Yes for family member/ friend, specify name of medicine _____

10. How many times did you buy these from the internet over the past 12 months?

☐ a. Once or twice a year
☐ b. Between 3-5 times a year
☐ c. Every 2 months
☐ d. Every month

The following questions are about any type of medicines bought over the internet

11. How did you choose from which internet site to buy the medicines?

(choose one or more answers)

☐ a. I chose the site that offered the cheapest medicine
☐ b. I searched the most professional-looking site
☐ c. I chose a registered online pharmacy
☐ d. I read reviews available on the internet, eg. forums/blogs
☐ e. I accepted recommendations from others
☐ f. It was a spur of the moment decision
☐ g. I responded to direct advertising, eg. unsolicited email
☐ h. Other _____

8. It-tabib tiegħek f'Malta tak ir-riċetta għax-xiri online?

☐ Iva
☐ Le
☐ Oħra, speċifika _____

Id-domandi li jmiss huma dwar mediċini 'over-the-counter' (OTC). Dawn m'għandhomx bżonn riċetta u jinkludu supplimenti tad-dieta li jinkludu vitamini u minerali, erballi (eż. ginseng) u prodotti ġejjin minn sors naturali (eż. Omega 3, glucosamine).

(Jekk ma tixtrix l-ebda tip ta' mediċina minn fuq l-internet, mur għall-mistoqsija 13)

9. Qatt xtrajt mediċini li m'għandhomx bżonn riċetta ("over-the-counter") mill-internet?

☐ Iva għalija, speċifika l-isem tal-mediċina _____

☐ Iva għal membru tal-familja/ħbieb, speċifika l-isem tal-mediċina _____

10. Kemm-il darba xtrajt dawn mill-internet matul l-aħħar 12-il xahar?

☐ a. Darba jew darbtejn fis-sena
☐ b. Bejn 3-5 darbiet fis-sena
☐ c. Kull xahrejn
☐ d. Kull xahar

Id-domandi li jmiss huma dwar kull tip ta' mediċina mixtrijin mill-internet

11. Kif għażilt is-sit tal-internet biex tixtri l-mediċini?

(aġġel risposta waħda jew aktar)

☐ a. Għażilt is-sit li offra l-aktar prodott irħis
☐ b. Fittixt sit bl-aktar dehra professjonali
☐ c. Għażilt spjżerija registrata "online"
☐ d. Qrajt reviews li jinsabu fuq l-internet eż. Forum / blogs
☐ e. Qgħadt fuq rakkomandazzjoni ta' ħaddieħor
☐ f. Ħadt deċiżjoni fil-mument
☐ g. Użajt sit minn reklamar eż. email mhux mixtieqa
☐ h. Oħrajn _____

12. What are the reasons that encourage you to buy medicines from the internet?

(choose one or more answers)

I purchase from the internet because:

- ☐ the medicine is cheaper than that available locally
- ☐ the medicine is not found locally
- ☐ it is more convenient than going to a doctor
- ☐ it is more convenient than going to a local pharmacy
- ☐ I do not have easy access to a pharmacy in Malta
- ☐ I am not asked for a prescription as I am requested by local pharmacies in Malta
- ☐ I avoid the embarrassment of speaking to my doctor about my problem
- ☐ I avoid the embarrassment of speaking to my pharmacist
- ☐ I avoid the embarrassment of speaking to my pharmacist in a pharmacy where there is no privacy
- ☐ there is lack of stock availability from the local private pharmacy
- ☐ there is an out of stock situation from the government health system
- ☐ I saw an advert on a foreign TV station
- ☐ I saw adverts through internet/email
- ☐ I obtain a better brand than that available locally
- ☐ I was advised by a health professional,

(please specify which type of health professional)

- ☐ I was advised by a relative or friend

☐ other,

specify

(go to question 14)

13. What are the reasons why you do not buy medicines from the internet?

(choose one or more answers)

I do not buy online because:

- ☐ I am not aware that I could buy medicines from the internet
- ☐ I never thought about it
- ☐ I do not want to risk buying medicines from the internet which are prescription-only in Malta
- ☐ I do not think it is safe
- ☐ I need stock immediately
- ☐ I was advised not to buy

(specify by whom)

- ☐ I do not know how to go about it
- ☐ I think the quality of the medicine may be inferior to local supply
- ☐ I get the medicines I need free of charge from the government health system
- ☐ I do not buy online, but might consider it in the future
- ☐ I do not need to
- ☐ other, please specify

(go to question 17)

12. X'inhuma r-raġunijiet li jharruk biex tixtri mediċini mill-internet?

(aġġiel risposta waħda jew aktar)

Nixtri mill-internet minħabba li:

- ☐ l-mediċina hija rħas minn dik disponibbli lokalment
- ☐ l-mediċina ma tinstabx lokalment
- ☐ huwa aktar konvenjenti milli immur għand it-tabib
- ☐ huwa aktar konvenjenti milli mmur l-spizerija lokali
- ☐ m'għandix aċċess faċli għal spizerija f'Malta
- ☐ ma nintalabx riċetta bħalma jitolbu fl-spizeriji lokali f'Malta
- ☐ nevita l-misthija li nkellem lit-tabib tiegħi dwar il-problema tiegħi
- ☐ nevita l-misthija li nkellem lill-ispizjara dwar il-problema tiegħi
- ☐ nevita l-misthija li nkellem lill-ispizjara f'spizerija fejn m'hemm privatezza
- ☐ jkun hemm nuqqas ta' disponibbiltà tal-istokk mill-ispizerija privata lokali
- ☐ jkun hemm sitwazzjoni ta' "out-of-stock" fis-sistema tas-saħħa tal-gvern
- ☐ rajt reklami permezz tal-internet/emajl
- ☐ rajt riklam fuq stazzjon tat-televixin barrani
- ☐ nikseb ditta aħjar minn dawk disponibbli lokalment
- ☐ kont avżat minn professjonist tas-saħħa,

(jekk jogħġbok specifika

liema tip ta' professjonist)

- ☐ kont avżat minn xi qrafa jew ħbieb

☐ oħra,

specifika

(għaddi għall-mistoqsija 14)

13. X'inhuma r-raġunijiet għaliex inti ma tixtrix mediċini mill-internet?

(aġġiel risposta waħda jew aktar)

Jien ma nixtrix mill-internet minħabba li:

- ☐ Ma nafx illi nista' nixtri mediċini minn fuq l-internet
- ☐ Qatt ma ħsibt dwar dan
- ☐ Ma rridx nrriskja nixtri mediċina mill-internet li f'Malta tirrikjedi riċetta
- ☐ Ma naħsibx li huwa "safe"
- ☐ Għandi bżonn stokk immedjatament
- ☐ Kont avżat biex ma nagħmilx dan,

(specifika minn min)

- ☐ Ma nafx kif nista' nagħmel dan
- ☐ Naħseb li l-kwalità tal-mediċina tista' tkun inferjuri mill-provvisti lokali
- ☐ Nikseb il-mediċini li għandi bżonn mingħajr ħlas mis-sistema tas-saħħa tal-gvern
- ☐ Jien ma nixtrix "online", iżda nista' nikkunsidra dan fil-futur
- ☐ m'għandix bżonn
- ☐ oħra, jekk jogħġbok specifika

(għaddi għall-mistoqsija 17)

14. Did you ever have any problem with medicines which you bought from the internet?

☐ Yes, specify _____

☐ No

☐ Don't know

15. How do you check that you can rely on an online pharmacy or website before purchasing?

(choose one or more answers)

- ☐ a. I look for a specific brand of medicine
- ☐ b. I check the physical address of the organisation backing the website
- ☐ c. I avoid very cheap medicines
- ☐ d. I check whether the online pharmacy is legally registered
- ☐ e. I look out for logos eg. the EU-wide logo
- ☐ f. I do not give importance to whether I should trust it or not
- ☐ g. Other _____



16. Does your doctor know you are buying medicines from abroad?

☐ Yes

☐ No

17a. How likely do you think it is that you can come across a problem with medicines bought over the internet?

- ☐ Very likely
- ☐ Likely
- ☐ Neither likely nor unlikely
- ☐ Unlikely
- ☐ Very unlikely

17b. If you think it's unlikely or very unlikely, why?

- ☐ a. I trust the website I buy from
- ☐ b. I buy from a registered online pharmacy
- ☐ c. I don't think there is any real problem with supply over the internet
- ☐ d. I have bought several times and have not experienced any problems
- ☐ e. Other, please specify _____

18. Do you agree with the statement that the quality of medicines from the internet is the same as that from the local pharmacies in Malta?

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

14. Qatt kellek xi problemi bil-medicina mixtrija mill-internet?

- ☐ Iva, specifika _____
- ☐ Le
- ☐ Ma nafx

15. Kif tiċċekkja li tista' tafda spiżerija "online" jew websajt qabel tixtri?

(aġġel risposta waħda jew aktar)

- ☐ a. Infittex ditta specifika ta' medicina
- ☐ b. Nivverifika l-indirizz fiziku tal-organizzazzjoni li tospita l-websajt
- ☐ c. Nevita prezżijiet irhas ħafna
- ☐ d. Nivverifika li l-ispiżerija "online" hija rreġistrata legalment
- ☐ e. Noqgħod attent/a għal xi logo bħal-logo mifruq fl-UE
- ☐ f. Jien ma nagħtix kas jekk tistax tafdaha jew le
- ☐ g. Oħra _____



16. It-tabib tiegħek jaf li inti qed tixtri medicini minn barra?

☐ Iva

☐ Le

17a. Kemm taħseb li hu probabbli illi tista' tiltaqa' ma' problema b'xi medicina mixtrija minn fuq l-internet?

- ☐ probabbli ħafna
- ☐ probabbli
- ☐ la probabbli u lanqas improbabbli
- ☐ improbabbli
- ☐ improbabbli ħafna

17b. Jekk taħseb li dan huwa improbabbli jew improbabbli ħafna, għaliex?

- ☐ a. Nafda l-websajt li nixtri minnha
- ☐ b. Nixtri minn spiżerija "online" rreġistrata
- ☐ c. Ma naħsibx li hemm xi problema reali bil-provvisti minn fuq l-internet
- ☐ d. Xtrajt diversi drabi u qatt ma esperjenzajt xi problemi
- ☐ e. Oħra, specifika _____

18. Taqbel mad-dikjarazzjoni li l-kwalità tal-medicini mill-internet hija l-istess bħal dik mill-ispiżeriji lokali f'Malta?

- ☐ Naqbel ħafna
- ☐ Naqbel
- ☐ La naqbel u lanqas ma naqbilx
- ☐ Ma naqbilx
- ☐ Ma naqbilx ħafna

19. Which of the following types of information about medicines do you rely on?

(choose one or more answers)

- ☐ a. Advice or information from a doctor
☐ b. Advice or information from a pharmacist
☐ c. Patient information leaflet
☐ d. Information from the internet
☐ e. Knowing people who are doing well on the same medicine
☐ f. Other, please specify _____

20. Are you aware of counterfeit/false products being available over the internet?

- ☐ Yes
☐ No
☐ Unsure

Any comments?

21. Do you, or someone under your care, suffer from a any long-term conditions or illnesses?

(choose one or more answers)

- | | me | someone else |
|--|--------------------------|--------------------------|
| a. Asthma | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Other respiratory disease, please specify _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Diabetes | <input type="checkbox"/> | <input type="checkbox"/> |
| d. High blood pressure (hypertension) | <input type="checkbox"/> | <input type="checkbox"/> |
| e. High blood cholesterol level | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Heart disease, please specify _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Cancer | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Rheumatoid arthritis | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Other musculoskeletal disorder (eg. Osteoarthritis), please specify _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Depression | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Other mental health problem, please specify _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Skin disease, please specify _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| m. Gastrointestinal, please specify _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| n. Other conditions _____ | <input type="checkbox"/> | <input type="checkbox"/> |

19. F'liema minn dawn it-tipi ta' informazzjoni dwar medicini ghandek fiducja?

(agħzel risposta waħda jew aktar)

- ☐ a. Parir jew informazzjoni minghand it-tabib
☐ b. Parir jew informazzjoni minghand l-ispjjar
☐ c. Fuljett ta' tagħrif li jkun mal-medicina
☐ d. Informazzjoni mill-internet
☐ e. Li tkun taf xi nies li qeghdin imorru tajjeb fuq l-istess medicina
☐ f. Ohrajn, jekk jogħgbok specifika _____

20. Int konxju/a ta' prodotti qarrieqa li huma disponibbli fuq l-internet?

- ☐ Iva
☐ Le
☐ M'iniex cert/a

Kummenti?

21. Inti jew xi hadd taht il-kura tieghek tbatu minn xi kundizzjoni jew mard fit-tul?

- | | jien | xi hadd ieħor |
|--|--------------------------|--------------------------|
| a. Ażżma | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Marda respiratorja oħra, jekk jogħgbok specifika _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Dijabete | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Pressjoni tad-demem għolja | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Livell tal-kolesterol fid-demem għoli | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Mard tal-qalb, jekk jogħgbok specifika _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Kanser | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Artrite reumatika | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Muskuloskeletalni oħrajn (eż . Osteoartrite), jekk jogħgbok specifika _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Depressjoni | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Problema oħra tas-saħħa mentali, jekk jogħgbok specifika _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Mard tal-gilda, jekk jogħgbok specifika _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| m. Gastrointestinali, jekk jogħgbok specifika _____ | <input type="checkbox"/> | <input type="checkbox"/> |
| n. Kundizzjonijiet oħra _____ | <input type="checkbox"/> | <input type="checkbox"/> |

Age: _____ years old Gender: ☐ Male
 ☐ Female

Education: ☐ Primary ☐ Secondary
 ☐ Tertiary ☐ Post-graduate

Employment: ☐ Full time ☐ Part time
 ☐ Unemployed ☐ Retired
 ☐ Student ☐ Self-employed

Nationality _____

Which locality do you live in? _____

Età: _____

Sess: ☐ Ragel
☐ Mara

Edukazzjoni: ☐ Primarja ☐ Sekondarja
☐ Terzjarja ☐ Postgradwatorja

Impjiegi: ☐ Part-time ☐ Full-time
☐ Ma naħdimx ☐ Irtirat
☐ Student ☐ Taħdem għal rasek

Nazzjonalità _____

Lokalità li toqgħod fiha _____

Grazzi tal-ħin tiegħek.

8

Where do you buy your medicines from? Minn fejn tixtri l-mediċini tiegħek?

Should you wish to participate in the draw to win an €80 postal voucher, you can leave a phone number here below.

This contact number will only be used for the purpose of the prize draw and will be deleted as soon as the draw has taken place. The winner will be contacted on this anonymous number for instructions where to send the voucher.

Contact number for prize draw: _____

Jekk tixtieq tipparteċipa fil-lotterija biex tirbaħ vawċer postali ta' €80, tista' thalli numru tat-telefown hawn taħt.

Dan in-numru ta' kuntatt ser jintuża biss għall-fini tal-lotterija u jithassar hekk kif it-tluġ jkun seħħ. Ir-rebbieħ se jiġi kkuntattjat fuq dan in-numru anonimu għall-istruzzjonijiet fejn għandna nibagħtu lill-vawċer.

Numru ta' kuntatt għall-lotterija: _____

Part 2

A second part to this research, which you may be interested in taking part in, will involve an interview. The interview will help us to develop a more in-depth understanding about concerns and difficulties people have with purchasing medicines in Malta and through the internet.

If you are interested to find out more about this part of the study, and to participate therein, kindly provide contact details below.

Contact number: _____

Email address: _____

Tieni Parti

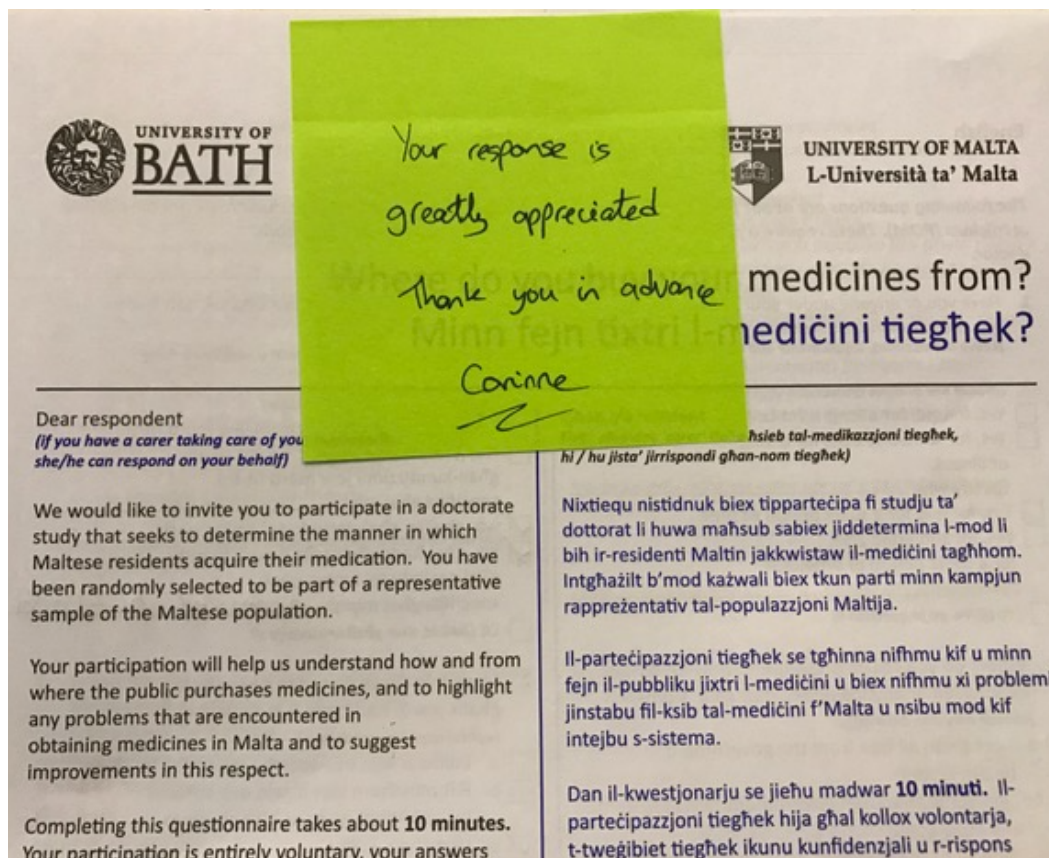
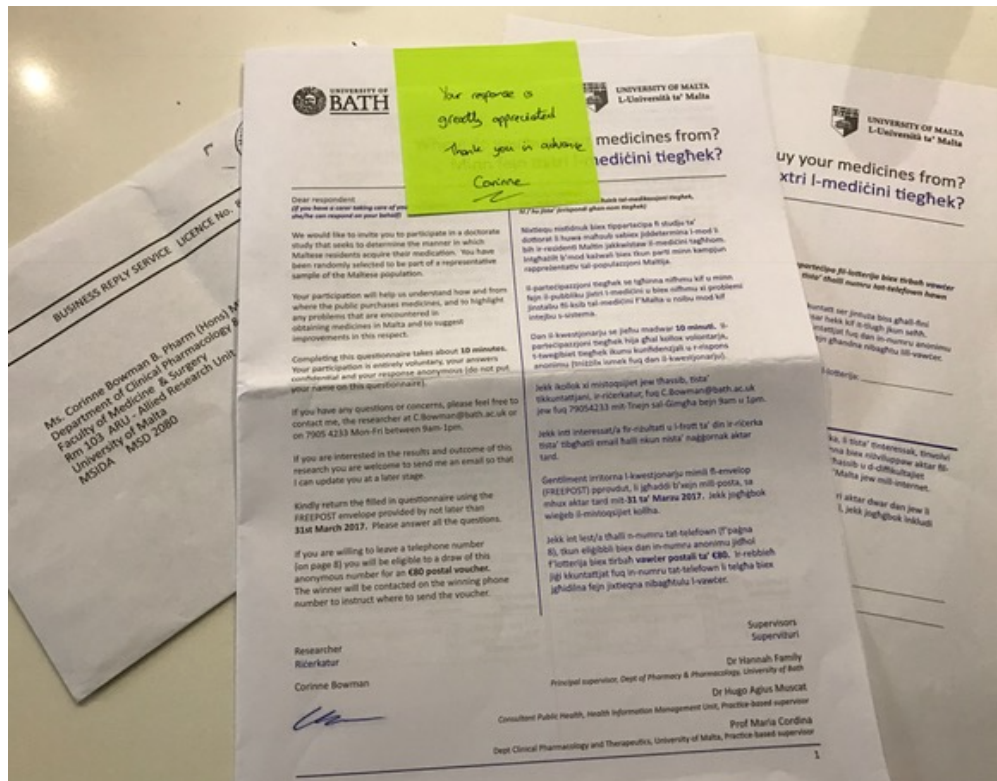
It-tieni parti ta' din ir-riċerka, li tista' tinteressak, tinvolvi intervista. L-intervista tghinna biex niżviluppaw aktar fil-fond dak li nifmu dwar it-thassib u d-diffikultajiet tan-nies li jixtru l-mediċini f'Malta jew mill-internet.

Jekk inti interessat/a li tiskopri aktar dwar dan jew li tipparteċipa f'din il-parti wkoll, jekk jogħġbok inkludi dettalji ta' kuntatt hawn taħt.

Numru ta' kuntatt: _____

Email: _____

APPENDIX 3 Questionnaire dissemination



APPENDIX 4 Responses to Question 9 in Questionnaire

Table 1: Respondents' responses that claimed to purchase OTCs online and gave reasons for purchasing online

Respondent's description	Generic	Comment	Reasons for online purchase
Cialis (same case as explained above)	Tadalafil (authorised in Malta both POM & not)	Q10-12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year; professional site; cheaper than local
Flexese plus	Glucosamine & chondroitin	Q10-12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year professional site; reads reviews, blogs online cheaper than local
Ginseng-B12 complex-cod liver oil-vit D-Glucosamine-Lutein-Gen 40		Q10-12 answered; Q13 not answered	<ul style="list-style-type: none"> 3-5 per year recommended from others cheaper than local
Glucosamine, Chondroitin		Q10-12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year recommended from others cheaper than local
L-Theanine		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year site offering cheapest medicine; professional site; reads reviews, blogs online not found locally; convenient than local p'cy
Lactase pills (I am lactose intollerant)		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 3-5 per year; reads reviews, blogs online; not found locally
Lecithin (does not buy POMs as per Q5)		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per yearly registered online p'cy cheaper than local
Minoxidil topical for hair growth	Minoxidil	Q10-12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 yearly; site offering cheapest medicine; professional site; reads reviews, blogs online; recommended by others; cheaper than local; convenient than local p'cy

Syndol	Paracetamol, codeine, caffeine	Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year; recommended by others; lack of stock at local p'cy
Valeriana Complex		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year registered online p'cy not found locally
Vitamin B complex		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 3-5 per year registered online p'cy cheaper than local
vitamin supplements		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 1-2 per year professional site cheaper than local
Well Kids chewable	Multivitamin	Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> monthly basis Reads reviews, blogs online; Not found locally
No name		Q10-Q12 answered; Q13 not answered	<ul style="list-style-type: none"> 3-5 per year registered online p'cy; cheaper than locally

Table 2: Respondents' responses that claimed to purchase OTCs online and gave reasons for both purchasing and NOT purchasing online

Respondent's description	Generic	Comment	Reasons for online purchase	Reasons for not purchasing online
Glucosamine		Q10-12 answered; Q13 answered	<ul style="list-style-type: none"> 1-2 per year; professional site; reads reviews, blogs online; cheaper than local; adverts on internet/email 	<ul style="list-style-type: none"> Risky; inferior quality to locally ; I get free of charge
Kalms (authorised in Malta as OTC)	Gentian, Humulus Lupulus, Valeriana Officinalis	Q10-12 answered; Q13 answered	<ul style="list-style-type: none"> 1-2 per year; reads reviews, blogs online; cheaper than local; convenient than local p'cy, lack of stock at local p'cy 	<ul style="list-style-type: none"> Risky; I get free of charge
Nurofen Migraine	Ibuprofen lysine	Q10-12 answered; Q13 answered	<ul style="list-style-type: none"> 1-2 per year; professional site; reads reviews, blogs online; not found locally 	<ul style="list-style-type: none"> Risky; Not safe
Omega 3 and		Q10-12 answered;	<ul style="list-style-type: none"> 3-5 per year; 	<ul style="list-style-type: none"> Never thought

vitamin C supplements		Q13 answered	<ul style="list-style-type: none"> • professional site; reads reviews, blogs online, recommended; • better brand than locally; advised by relative/friend 	about it; <ul style="list-style-type: none"> • Risky; • not safe; • do not need to
Tomato natural (dietary supp)		Q10-12 answered; Q13 answered	<ul style="list-style-type: none"> • 1-2 per year; • Reads reviews, blogs online; • Not found locally 	<ul style="list-style-type: none"> • Never thought about it; risky; • need stock immediately
vitamins & supplements		Q10-12 answered; Q13 answered	<ul style="list-style-type: none"> • 1-2 per year; • professional site; • cheaper than local 	<ul style="list-style-type: none"> • Not safe

Table 3: Respondents' responses that claimed to purchase OTCs online but gave reasons for NOT purchasing online

Group A: Cannot Conclude - not enough information given to conclude whether they had bought an OTC in the past yet would not consider internet purchasing for what they think are 'actual' medicines

Respondent's description	Generic	Comment	Reasons for not purchasing online
Urticalcin - not available in Malta	Stinging nettle complex	Q10 answered; Q13 answered Interview took place- was not clear if she bought online but also said that a friend gets tablets when coming over from abroad	<ul style="list-style-type: none"> • 1-2 yearly; <p>Do not buy but might consider in future</p>
Glucosamine, omega 3, vitamin C (for me)		Q10-12 not answered; Q13 answered Q14 answered	<ul style="list-style-type: none"> • I do not want to risk buying medicines from the internet which are prescription-only in Malta. • I do not think it is safe. • I think the quality of the medicine may be inferior to local supply. <p>No problems with medicines bought from the internet</p>

Over the counter Seven seas (for me)		Q10-12 not answered; Q13 answered Q15 answered	I do not need to I check whether the online pharmacy is legally registered
Panadols; Evening primrose oil/cod liver oil (for me)	Paracetamol	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I do not want to risk buying medicines from the internet which are prescription-only in Malta. • I do not think it is safe. • I think the quality of the medicine may be inferior to local supply.
<p>Excerpts from feedback open text: "The internet is a powerful tool if used correctly. In Malta there is not enough education about the services and availability of internet users. I do not like buying clothes online since I prefer to see the texture and fit. I cannot understand how someone can risk buying medicines online- I care more about myself and my body- I also question the doctor and pharmacist why I am getting this and that medicines and I need to check expiry dates and quality before I buy. I may come across as someone who is very suspicious but adopting a healthy lifestyle and exercising is an excellent way to help yourself live healthy. Genetically transmitted conditions cannot be helped, all other illnesses can be addressed differently."</p>			
Evening primrose, Glucosamine, Ideos* (for me)	*Calcium tablets	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • Do not buy but might consider in future
eye drops (for me)		Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I do not want to risk buying medicines from the internet which are prescription-only in Malta
Lyprinol (for me)	Natural anti inflammatory supplement	Q10-12 not answered (crossed off); Q13 answered	<ul style="list-style-type: none"> • I do not think it is safe
medicines connected with flu and vitamins		Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I do not think it is safe
Panadols; Irfen; Malox (for me)	Paracetamol; Ibuprofen Antacid preparation	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I do not think it is safe. • I need stock immediately
Panadols; Nasal sprays (for me)	Paracetamol	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I do not want to risk buying medicines from the internet which are prescription-only in Malta.

			<ul style="list-style-type: none"> I do not think it is safe.
Paracetamol (for me)	Paracetamol	Q10-12 not answered; Q13 answered Comment (translated): "I like to always speak to my doctor. I always listen to his advice."	<ul style="list-style-type: none"> I do not think it is safe.
Paracetamol; lozenges (for me)	Paracetamol	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> I do not want to risk buying medicines from the internet which are prescription-only in Malta. I do not think it is safe.
Solpadine; Day nurse; Night nurse (for me)	Painkiller; Cold syrup; Cold syrup	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> I do not want to risk buying medicines from the internet which are prescription-only in Malta. I do not think it is safe.
No product specified (for me)		Q10 answered; Q11-12 not answered; Q13 answered	Once or twice a year <ul style="list-style-type: none"> I do not think it is safe.
No product specified (for me)		Q10-12 not answered; Q13 answered Comment translated: "Satisfied to pick up the medicines from the private pharmacy and that of my choice."	<ul style="list-style-type: none"> I do not want to risk buying medicines from the internet which are prescription-only in Malta. I do not think it is safe.
Group B: Probably Not- specifically claimed somewhere in questionnaire or interview that they never buy online or even said that they never thought about it			
Respondent's description	Generic	Comment	Reasons for not purchasing online
Echinacea; Calcium liquid form (for me) (had also mentioned		Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> I do not want to risk buying medicines from the internet which are

buying POM from a pharmacy abroad directly besides from local pharmacy)		Q20 comments: "Do not buy medicine from internet" Interview took place- confirmed NOT purchasing from internet	prescription-only in Malta. • I do not think it is safe. • I do not need to
Panadols (for a cold or influenza)		Q10 Q11-12 not answered; Q13 answered	"qatt' (=never) • I never thought about it. • I do not think is safe. • I do not know how to go about it. • I get the medicines I need free of charge from the NHS. (almost all).
Paracetamol (for me)	Paracetamol	Q10-12 not answered; Q13 answered	don't know that I can buy medicines over the internet
Xanax; Anafranil; sticks for diabetes tests (for me)	Alprazolam; Clomipramine	Q10 answered; Q11 'nothing'; Q12 not answered; Q13 answered "I buy them from St Catherine Zejtun"	'xejn' (=nothing) but also chose buying from internet 'every month' I get the medicines I need free of charge from the government health system
No product specified (for me)		Q10-12 not answered; Q13 answered	I never thought about it
Panadols (for me) "Maltese pharmacy"	Paracetamol	Q10-12 not answered Q13 answered	• I am not aware that I could buy medicines from the internet. • I never thought about it.
Panadols; Anadin Ultra (for me)	Paracetamol; Ibuprofen	Q10 answered; Q11 "ma nixtrix" (I do not buy) Q12 not answered Q13 answered	Every 2 months I never thought about it
Panadol extra; Elidel (for me)	Pimecrolimus	Q10 not answered Q11 not answered;	

Panadol extra; Actifed, Calpol (for family member)	cream	<p>“ma nixtrix minn internet”=I do not buy from internet</p> <p>Q12 not answered</p> <p>Q13 answered</p> <p>Q15 “Ma nixtrix online” =I do not buy online</p>	I never thought about it
<p>Panadols;</p> <p>Lozenges etc (for me)</p> <p>Paracetamol suspension (for family member)</p>		<p>Q10 answered</p> <p>Q11 answered “never buy medicines over the internet so far”</p> <p>Q12 not answered</p> <p>Q13 answered</p> <p>Q20 comment: “This is the reason why I never ventured on buying medicinals over the internet.”</p>	<p>Between 3-5 times a year</p> <ul style="list-style-type: none"> • I do not think it is safe. • I think the quality of the medicine may be inferior to local supply.
HC Canesten (for me)	Clotrimazole & hydrocortisone	<p>Q10 answered (1-2 per year);</p> <p>Q11-13 marked ‘NA’</p>	
Osteocare (for me)	Calcium combination tabs	<p>Q10-12 not answered;</p> <p>Q13 answered:</p>	don't know that I can buy medicines over the internet
Panadol	Paracetamol	<p>Q10-11 not answered (crossed off);</p> <p>Q12 “NA”</p> <p>Q13 not answered</p> <p>Q15 “NA”</p>	<ul style="list-style-type: none"> • I do not want to risk buying medicines from the internet which are prescription-only in Malta. • I get the medicines I need free of charge from the NHS
Panadol; urticaria (cream) (for me)	Paracetamol	<p>Q10 answered;</p> <p>Q11-13 not answered</p> <p>Rest of questions from Q11 were not answered</p>	Every 2 months
Panadols (for me)	Paracetamol	<p>Q10-12 not answered;</p> <p>Q13 answered</p>	<ul style="list-style-type: none"> • I do not want to risk buying medicines

			from the internet which are prescription-only in Malta.
Comments translated: "...doctors warn us not to buy" ".....when you are in pain that you cannot resist it, that's how certain individuals buy from internet but you cannot believe everything because there is a lot of danger concerning health."			
Panadols (for family member)	Paracetamol	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I never thought about it. • I do not know how to go about it
Panadol (for family member)	Paracetamol	Q10-13 struck off	
Panadols; Nurofen; cough syrup; ... (for me)	Paracetamol; Ibuprofen & paracetamol;	Q10-12 not answered; Q13 answered	<ul style="list-style-type: none"> • I do not think it is safe. • I do not buy online, but might consider it in the future

APPENDIX 5A Questionnaire Feedback – Original Languages

1. Comments related to high cost of medicines and needing subsidised medicines
Nixtieq li l-gvern jatina l-lenti u n-nuccaliet tal-vista, ghax kull meta mmur u ttini r-ricetta jkolli nixtri l-lenti u n-nuccalijiet tal-boghod u tal-qrib. U pinnoli tat-thyroid (levothyroxine)
Jiena ghandi bzonn medicini li ma nistax nghaddi minghajromu l-gvern ma jaghtihomlix u bil-kemm nista nlahhaq mal-hajja bhala pensjonanta
I am a trans male individual and every 12 weeks I buy testosterone, as prescribed by my doctor. This costs 150euro per dose. The government does not offer it to people like me for free or subsidised
Inkun tajjeb kieku xi medicina bhal tal-'prostata (Omnicon) jidhlu fil-lista tal-gvern (that medicina b'xejn). Ghax "expensive" u bil-fors jixtrihom
Hemm bzonn li jaghtuna seringha ghal kull titqiba mhux 10 seringi kull xahar, jigifieri trid tiltaqqab 6 darbiet b'seringa disposable
Ilmi dan l-ahhar sentejn nbati minn lactose intollerant. Nonfoq l-flus kull xahar. Hemm bzonn li minn hu bhali jibda jircievi xi beneficcju kemm l-ikel u kemm l-medicina huma gholjin.
The only concern I have regarding medicines are the prices! They are very expensive. It's stressful seeing my grand-parents buying so much medicine since they suffer both high/low pressure, sugar and diabetes, that they struggle to buy them. Thank you and hoping my information is useful. Good luck.
Jiena niehu l-Galvus 50mg wahda kuljum u jkelli nixtrihom dejjem Meta saqsejthom qalluli li z-zokkor irrid ikun bejn 7 u 8 mhux aktar. Hija tghidli li tieghi jkun 10 matul l-gurnata ghalhekk jkolli nixtrihom Nispera li tirangaw din is-sitwazjoni u nibda nehodhom b'xejn ghax jien bil-pensjoni. Grazzi
Nixtieq li il pinnoli tal prostituta li jiehodom ir-ragel li jkunu b'xejn, u li jien nihi il gloscomine tablet jatumli b'xejn, ghax ghandi hafna altrite, u ma nistax nixtrihom ghax ghanda penzjoni wahda, ghax ma hdimt qatt
Jiena nixtieq li il Gvern jaghti b'xejn aktar medicini aktar fuq il ??? Tal Prostituta speccjalment dak morda bid dijabete Grazzi hafna
My husband and I live on relief. And I have to buy esteocare, avamys, levothyroxine monthly apart from the vitamin pills my husband and I have to take & illness medication. I'd like to suggest that these medicines should be free----if not, at least be at a reasonable price + the batteries for my hearing aids
I buy Sertraline and is costing me 44 euros as I used two packets of 50mg monthly (2 pills 50mg a day). I tried the 100mg which costs 30 euros but is not as efficient. The money I get for my illness is barely enough to live as I am unable to keep a steady job. Thank you for your help
Gluten free diet is a long term diet/ life long but since you stick to it- follow consultant's advice

and attend to yearly hospital appointment for blood tests and bone density, you should be fine. 45euro monthly is a bit low budget considering that gluten free food for a month is much higher than that. It has to be specific and not found in every shop or grocer. Hope it was helpful!
Jiena kuntenta bil-kwalita ta attenzjoni mic-centru ta sahha u l-isptar 'Mater Dei', pero nixtieq li jkollna ftit ghajnuna ohra ahna li ma ghandnix kartuna Rosa. Grazzi hafna u prosit tal-dan il-kuntatt.
2. Comments about always being in contact with doctor and relying on doctor's advice
Hi, Jiena l-medicini dejjem nixtrihom bl-ordni tat-tabib u qatt ma ngib medicina min fuq l-internet. Il-medicina li qed niehdu fit-tul itijomna l-gvern u li ma jkunux fit-tul nixtrihom minghand l-ispizjara tar-ral tal-tagħna. Grazzi
Nzomm kuntatt regolari mat-tabib tal-familja u nghamel test tad-demem regolari biex inzomm l-kolesterol baxx
Bhala mard ma tanc nimordu u ghalhekk ma tantx nirreferu għall-medicina. Bhala medicina dejjem qadna fuq it-tabib tagħna u nixtrugħa min Malta. Grazzi
Sakemm jibqa hajj it-tabib tal-familja li nafda l-parir tiegħu nixtri mill-ispizjerija tiegħu u mhux mill-internet.
Jiena nitlob li nitkellem dejjem mat-tabib tiegħi. Dejjem noqghod fuq il-pariri tiegħu. Grazzi Qatt ma' nixtri mill-internet. Medicini nohodhom fuq parir tat-tabib jew l-ispizjar.
F'xi mard li jista' jinqala' minn zmien għal zmien eg/ influwenza nimxi fuq il-pariri tat-tabib
meta kont nigi ikkurata għall-'Obsessive compulsive disorder' dejjem strajt il-medicini prekritti mit-tabib jiena. Għat-tifla dejjem xtrajt il-medicini anke jekk 'aracetamol' bi preskrizzjoni. Normalment din tkun valida għal 6 xhur/rigward ta' medicina li normalment irid ikollok id-dar għal li jista' jkun.
Ma narax li għandi nixtri online minhabba li għanda hafna tobba/ spizjara ta' affari tagħhom
Personally, I did not encounter any particular difficulties in the supply of both prescription medicines and over the counter medicines. Since the medication that I am currently taking is used in some chemotherapy treatments, I take periodical blood tests so that its side effects do not affect my liver and renal function
Fl-opinjoni tiegħi qatt ma nabbuza minn medicini. Dejjem niehu il-parir ta' tabib tal-familja. Assolutament ma naqbilx li tinxtara medicina mill-internet
I never thought of buying any medicine over the internet. When my doctor advises medicine I usually buy it immediately from a local pharmacy. These medicines are antibiotics for fever/flu or back pain. Otherwise I have never used any other form of medicine. I hope that I answered the questionnaire correctly and I wish you all the best of luck in your research.
3. Comments about satisfaction with the service and medicines given through the health system including the private pharmacies

sodisfat bil-medicini u bis-servizz
Nixtieq min qalbi nirringrazzja lil min ha hsieb biex solva l-problema tal-pirmli out of stock li kollna ilna niffacjaw, ghalija kienet problema kbira. Grazi hafna lil gvern
Nispera li knot utli ghalik. Jien moqdi kif jien pero jekk ikun hemm xi titjib napprezza. Nawguralek ghal l-istudju tieghek. Grazzi
For me is everything good
Jien nihi hafna pjacir murr il-Poliklinik Tar Rahal gdid u dejjem inqadejt tajjeb. Riqward pilloli jien dejjem sibt li hien intitolat ghallihom mill Gvern. Ohrajn nixtri bit-ricetta mill-ispizerija.
Nispera li kont spjegat u ktibta biex fejn nista nejn biex is-servizz tas-sahha ikompli miexi ghall l-ahjar ghall kulhadd
Is-sistema tal-POYC iija tajba hafna
Sissa qatt ma' sabet problema l-mara biex iggib il-pilloli mis-sistema tas-sahha tal-gvern. Bis-sistema POYC nahseb morna l-quddiem u tinqeda tajjeb hafna. Frankajna hafna hin li noqghod nistenna kif konna qabel. Dejjem hemm xi ttejjeb speċjalment fejn tirrigwardja s-sahha. Sahha lil kulhadd Karmenu
Maybe reason I never ordered to buy online, cause we have very helpful pharmacists in the area that even if medicine is not currently available, they take my number and call me when available or get it specifically for me. Also, I trust the, a lot as they are very strict with prescriptions especially where antibiotics are concerned.
sodisfatt li nigbor il-medicina mill l-ispizerija privata u li jrid jien
Ghandi pillolo bis-sistema tal-gvern u dejjem sibthom efficjenti. Pillolo bhal vitamini, pilloli ghat-thyroid dejjem xtrajthom minghand l-ispizjar. Ma nafx ghalfejn dan il-hassel biex tixtrihom mill-internet meta l-pillolo jistghu ma jaslux jew jkun neferjuri. L-amont li ghandi bzonn hu ffit. Nawgura li ricerka tieghek tkun success! Nies bhalkom ghandna bzonn.
4. Comments about dissatisfaction with quality of NHS medicines due to frequent change in brands and other problems
I feel that the quality of pills obtained free from gov. health system has degenerated (eg. Diovan to Valsartan)
Niextiq li il pirmli jipqaw ta l-istess ditta ohrajn nibza jaghmlu side effect
Unfortunately sometimes information handed out by pharmacists + doctor contradict the product information leaflet which can make it very confusing to the consumer
Bhal ma ga ktibt, jiena nati kas hafna tal-medicina li niehu. Ghalhekk nixtieq nemmen li il-medicina tal gvern li niehu m'ghand l-ispizjar ta' l'ghazla tieghi, hija veru tajba daqs li kieku ghadni nictriha m'ghand l-ispizjar ghax bil-fomm kulhadd jghid li huma l'istess imma hafna drabi sry, imma ma nemminx.
Naraha tal-misthija li certi pilloli jigu out of stock. Pilloli tal-pessjoni, per ez., huma ta' hajja jew

mewt; ma tistax taffordja tghaddi minghajrhom. Min jiehu hsieb li jordna l-pilloli ghandu jgib bil-kwalita biex pilloli bhal dawn ma jigux out of stock.
When doctors or consultants issues a prescription for new pills to issue also the application for approval by St Luke's Department to avoid the inconvenience for a second visit to them which could involve quite a lapse of time they could be made available from the pharmacy
Hafna pilloli jigu l-istess isem. Pero specjalment l-pilloli li ghandi ntitolghati ghalihom minn tal gvern jinbidlu l-kulur u (packing) ta spiss. Ghalha diga diffici li niehu hafna (pills. Huma aktar diffici li ghal min ma jafx jaqra u ghal anzjani. (Rimarka) Ir-ragel tieghi ma jarafx il-pilloli ghax qatt ma jkun l-istess u l-istess kulur u ma jafx jaqra. Thanks
Dan il-kwestjonarju ntbat lil ragel tieghi Manuel Magrin imma r-rispondejtu jien Marlene ghax jien nuza l-medicini aktar minnu. Qabel watt ma kelli problemi imma issa qaluli li biex jaghtuni l-Aircort irid immur ghand l-ispeccjalista. L-aktar haga li nkwetatni kienet li kienu jatuni l-paroxetine tad-ditta Aurobindo imma issa tawhomli _Arketis) not coated u jinhallu fil-halq u darba minnhom wahluli fi grizmejjja u ma stajt niehu nifs sewwa barra t-tghoma hazin u nqalet l-ghada tant li ghamilt jumejn mahnuqa. Ghalhekk issa qed nixtrihom film coated. Jiddispjacini li forsi bhali nies ohra qed jarmuhom jew inatu biex jibilghuhom. Nispera li kont ta' xi ghajnuna.
Frustrated with the difficulty getting (Cynomel 0.025mg) thyroid medication that I must have everyday. Can only buy at hospital, and on occasion, they do not have ANY available. How can this be?
Dwar drops Timolol 0.25% ilu ma jkollol lispjer tal Hal Qormi 4 xhur u ikolli nixtrihom ghat-tifel tieghi bil-glaucoma
Naghamel kumment rigward il-kartuna s-safra biex niehdu l-medicini. Burokrazija zejda minhabba permess biex tiehu medicina li trid toqghod iggeddu kull sena. Dan hela ta hin meta l-medicina tkun preskritta ghall-ghomrok.
5. Comments about existing awareness among the Maltese of issues about safety
Buying medicine online means there is no urgency. The website- hosting location and reputation also matters. Sometimes there is also a difference in legislation between EU/US
Jiena ma naqbilx li nixtri medicina b'internet mal medicina ma ticcajtax u jekk ma jaqbilx mieghek xorta trid tabib ikwidak. Jien tal-kolesteroll majaqblux mieghi tawni tlett kwalitajiet. Se toqghod tibghat lura. Flus fil-hella la ghana Malta. Vera kultant naqra iktar ghaljin fejn sahha ma joghod xejn. thanks
Nixtri hafna affarijiet mill-internet izda qatt ma nixtri affarijiet ta' l-ikel jew medicini ghax ghalkemm wiehed jista jiverifika l-genwinita taghhom dan jiehu l-hin. Barra dan il-konsum ta' medicina god-dar tieghi huwa baxx hafna u ghalhekk qatt ma kien jaqbel li niehu r-riskju.
Hafna min dawn il-mistoqsijiet ma stajtx namilhom dan ghaliex jien qatt ma xtrajt mill-online, medicini. Is-sahha tigi l-ewwel b'hekk mhix se infittex prodotti li hemm posibilita li huma qarrieqa. Ninsab konxju ta' dan u nissugerixxi wkoll lil membri ta' familja b'dan
I don't buy any medicines from the internet as I don't think its safe
The internet is a powerful tool if used correctly. In Malta there is not enough education about the

services and availability of internet users. I do not like buying clothes online since I prefer to see the texture and fit. I cannot understand how someone can risk buying medicines online- I care more about myself and my body- I also question the doctor and pharmacist why I am getting this and that medicine and I need to check expiry dates and quality before I buy. I may come across as someone who is very suspicious but adopting a healthy lifestyle and exercising is an excellent way to help yourself live healthy. Genetically transmitted conditions cannot be helped all other illnesses can be addressed differently.
Jiena personali mhux ta'ideja li tixtri minn fuq internet. (sewwa hu kejj tircievi xi pilloli ta' l'annimali flok tal-bnedmin)
Jiena nahseb illi kieku il-kura li jkun jehtieg l-persuna, tigi immoniterjata fil-bidu taghha, il-pilloli jistu jigu evitati hafna, ghaliex meta jkollok l-ugih li ma tkunx tiflah tistaportieh, b'hekk certu individwi jixtru mill-internet pero ma tistax temmen kollox ghaliex hemm hafna periklu, rigward is-sahha.
Trustespecially because medicianls can have symptoms on which you might want to consult doctor in Malta
6. Comments about needing more knowledge about medicines they are taking including more knowledge about herbal remedies; about need for more awareness about medicines online and about their safety
Naqbel hafna li jkun aktar taghrif dwar il-medicina li nkunu sa niehdu ghax hafna kundizzjonijiet zdiedu u il-hin kollu tisma fuq hafna medicina bhal home remedies li ghall kemm jista jkunu tajbin imma madniex tarif bizzejjed bhall medicina li nixtru minghand l-ispzjar li sar hafna iktar studju qabel giet uzata ghall kemm tista li jkun hemm xi prodot minn dik li tkun maghmula li ma jaqbilx mieghek.
Hemm bzonn tal iktar dwar imformazjoni kif wiehed ghandu jakwista il-medicini postijiet alternature
Huwa xi haga tajba li ninfurmaw hafna lin-nies fuq affarijiet li jistghu ikunu ta' deni ghall-sahhithom. Grazzi
Forsi tistghu taghmlu lista ta' xi prodotti li huma 'safe' li jinxtraw minn fuq i-internet.
More official information (health dept) about medicine online (and even locally) about reliability, risks, side-effects- 'approved medicine'
Well done! Much needed research! POMs purchased on the web need surveillance. We need more awareness to poor quality/fake POMs acquired on the web. Many like steroids or hormones cause psychosis/relapses. This will reduce hospital admissions for this and other disorders eg. liver toxicity. POM purchase of steroids off the web is a huge + tragic contemporary reality.
I think more information should be made available about buying medicines online; especially certified/registered online pharmacy so that people can identify legitimate sellers
7. Comments regarding expensive prices of medicines compared to abroad
Medicine prices in Malta are sky high when compared to abroad. There is no control over the

prices
I also take calcium suppliments + Vit D. I buy these from the UK whenever I'm there as they're cheaper. Unfortunately I can't do anything about the Prolia I have to pay the high price. I've been living here for 2 and half years after an ansence of 35 yrs and find medicine very expensive, even things like creams, cough mixtures etc.
Get medicines from Sicily as they are much cheaper
Prices of medicines in Malta seem to be much higher than in the rest of Europe. In some cases the differences is quite stunning. Ex. Zyrtec or cetrizina tablets and Lipanthyl (in Malta around 12 euro in France around 6 euro)
8. Comments that buying medicines online would not be a problem if reputable and if quality is guaranteed
If the internet source was a reputable one, I don't think I'd have a huge problem shopping for my medicine online.
I would assume it is safe to buy medication online if the website you are buying from has a good reputation, same goes with clothes, tech and other equipment bought online.
If I was sure that the product (medicine) is of the same quality and brand that I buy locally and the price is lower I would highly consider buying from the internet. (obviously, if not needed immediately)
9. Comments about being healthy and only uses OTCs and supplements
Nirringrazzja lil Mulej li jien ghandi 86 sena u ma nafx li qatt imrad. Niehu biss vitamin B complex. Pero dawn l-ahhar erba snien hargitli l-artrite f'irkopto, l-pali ta' ideja u l'ghar f'ghonqi u qed niehu l-lprinol. Pero pillolo tat-Tuneric u Ginger jnaqqsu l-ugieh u bejthom din gimgha.
Jien ma nihu ebda medicina sa issa "Grazzi Mulej" hlief xi aspro kull tant
10. Comments about disagreeing and not intending to purchase online
L-ahhar medicina li hadt hija s-sena l-ohra- antibiotics. Qatt ma xtrajt medicina mill-internet u m'ghandix hsieb li nixri
I've never bought any medicine online. Every time I was in need of any particular medicine I always obtain (buy) it from my local pharmacy
11. Comments about being unaware whether medicine can be obtained free from NHS
As I have stated in the previous page, I suffer from kidney problems. They leak protein in my urine and they work half as good as normal kidneys. I take enalapril twice everyday for them, but I do not know if I can get them free with the government health system, so i just buy them.
Medicina mill internet qatt ma xtrajt. Jiena u il-mara niehdu b'xejn min tal-Gvern. Jiena nixtri

Rhinocort Nasal spray ghax qatt ma icekjajt nistax ingibu b'xejn jew le. "wiehed kull xhar"
12. Comments about doctor's prescribing
My families' extended and nuclear are my main priority so health and health products are in my interest. If herbal remedies do not work then, and only then will I get medical solutions. Doctors are too eager to give medication for every little ailment and unfortunately, people are becoming addicted or immune. Good luck with your study!
My father takes medication for hypertension available from gov. Other ailments for all my family are bought @ the local pharmacy as prescribed. I try to limit buying/taking medicines in general and prefer to revert to more natural remedies to cure flu symptoms for both myself and my son
13. Comments about difficulties to fill questionnaire
I did not find it very easy to complete
Questionnaire need to be revised as 'the go to question 9' is very misleading
14. Comments about internet use for purchasing medicines not necessary for Malta
Go Rahal Gdid, hawn ammont sostanzjali ta' sizerija u l-uzu tal-internet ghall-mediini mhux necessarju. Hawn spizeriji bhal dik tal-ajruport nazzjonali li jibqghu miftuhin 24 siegha
15. Comment about free medicines going to waste
However, I do feel that some of the freely-given medicine by govt goes to waste because some are dispensed with a very short expiry date. Happened to my father
16. Comment about increase in retail prices
Sfortunatament, kull meta jkolli bzonn nixtri medicini, anke semplici 'panadol' insibhom li gholew fil-prezz.
17. Comments about the need for more treatment options
Nixtieq li jkun hawn aktar kura li tikkontrola l-marda tal-gilda tal-psorises ghax inbatu hafna bija ghax bil-prodotti meta tkun agresiva ma jirnexilekx tikkontrola nixtiq kiku jkun psibli li tinata xi tip ta injection biex ghalinqas tikalma.
18. Comments about side effects with medicines purchased online
Ghalkemm il-medicina li xtrajt mill-internet kienet tajba, wara ftitt xhur bdejt insofri minn trieghed tal-id il-leminija u meta qrajt fuq il-fuljett tal-medicina kien indikat li seta jkun he,, din is-side-effects. Waqaft l-uzu tagghom, xtrajt minn Malta u rgejt mort ghan-normal - bla side-effects
19. Comment about not having internet
Jien m'ghandix internet u ma nafx nuzah, ghalhekk in-numri 13,17 u 18 ma stajtx nirrispondihom sew.
20. Comment about local availability
In general we buy all our medicines locally except some which we don't find locally but only buy from BOOTS website

APPENDIX 5B Questionnaire Feedback – English Translation

1. Comments related to high cost of medicines and needing subsidised medicines
I wish that the government gives us lenses and sight glasses, because everytime I go and get a prescription I would have to buy lenses and glasses for far and near sight. An the pills for thyroid (levothyroxine)
I need medicines that I cannot do without, the government does not give them to me and I barely can cope financially as a pensioner
I am a trans male individual and every 12 weeks I buy testosterone, as prescribed by my doctor. This costs 150euro per dose. The government does not offer it to people like me for free or subsidised
It would be good if some medicines like for prostate (Omnic) are included in the government list (free medicines). Because "expensive" and I have to buy them by force
They need to give us syringes for every injection and not 10 syringes per month, that means you have to use a disposable syringe 6 times
I have been these past two years suffering from lactose intolerance. I spend money every month. There is a need that those who are like me starts to receive a subsidy. Both food and mediicnes are expensive
The only concern I have regarding medicines are the prices! They are very expensive. It's stressful seeing my grand-parents buying so much medicine since they suffer both high/low pressure, sugar and diabetes, that they struggle to buy them. Thank you and hoping my information is useful. Good luck.
I take Galvus 50mg once a day and I have to always buy them. When I asked they told me that the sugar level must be between 7 and 8 and not more. She told me that mine is 10 during the day and that is why I have to buy them. I hope that you arrange the situation and I start taking them free because I am a pensioner. Thank you
I wish that the prostate pills that my husband takes will be free, and that I who takes glucosamine tablet is given to me free, because I have a lot of arthritis, and I cannot buy them because we have one pension, because I never worked
I wish that the government gives more medicines for free.....For the prostate especially, those with diabetes Thanks alot
My husband and I live on relief. And I have to buy esteocare, avamys, levothyroxine monthly apart from the vitamin pills my husband and I have to take & illness medication. I'd like to suggest that these medicines should be free----if not, at least be at a reasonable price + the batteries for my hearing aids
I buy Sertraline and is costing me 44 euros as I used two packets of 50mg monthly (2 pills 50mg a day). I tried the 100mg which costs 30 euros but is not as efficient. The money I get for my illness is barely enough to live as I am unable to keep a steady job.THank you for your help
Gluten free diet is a long term diet/ life long but since you stick to it- follow consultant's advice

and attend to yearly hospital appointment for blood tests and bone density, you should be fine. 45euro monthly is a bit low budget considering that gluten free food for a month is much higher than that. It has to be specific and not found in every shop or grocer. Hope it was helpful!
I am happy with the quality of the attention given from the health centre and 'Mater Dei' hospital, but I wish that we are given some more help to us that do not have a 'pink' card. Thanks a lot and well done for this contact
2. Comments about always being in contact with doctor and relying on doctor's advice
I always buy medicines on doctor's orders and I never get medicines from internet. The medicines that we are taking chronically the government gives them to us and those not for a long period I buy them from our village pharmacist. Thank you
I keep in regular contact with my family doctor and I do regular blood tests to keep cholesterol low
With regards to sickness, we do not get sick very much and so we do not revert to medicines very much. As regards to medicines we always followed our doctor and we buy it from Malta. Thank you
Until my family doctor remains alive, whose advice I trust, I buy from his pharmacy and not from the internet
I always ask to talk to my doctor. I always follow his advice. Thank you
I never buy from internet. I take medicines upon the advice of the doctor or the pharmacist
For sickness that crops up from time to time eg influenza I buy on the advice of the doctor.....
When I was being treated for 'Obsessive compulsive disorder' I always bought the medicines prescribed from my doctor. For my daughter I always bought the medicines even if paracetamol with a prescription. Usually this is valid for 6 months/ regarding medicines that you usually need to have at home just in case
I do not see that I should buy online because we have a lot of responsible doctors/pharmacists
Personally, I did not encounter any particular difficulties in the supply of both prescription medicines and over the counter medicines. Since the medication that I am currently taking is used in some chemotherapy treatments, I take periodical blood tests so that its side effects do not affect my liver and renal function
In my opinion I never abuse medicines. I always follow the family doctor's advice. I absolutely do not agree that medicine is bought over the internet
I never thought of buying any medicine over the internet. When my doctor advises medicine I usually buy it immediately from a local pharmacy. These medicines are antibiotics for fever/flu or back pain. Otherwise I have never used any other form of medicine. I hope that I answered the questionnaire correctly and I wish you all the best of luck in your research.

3. Comments about satisfaction with the service and medicines given through the health system including the private pharmacies

I am satisfied with the medicines and with the service

I wish to thank those who took care to solve the problem of pills out of stock that we had been facing, for me it was a big problem. Thank you to the government

I hope I was useful to you. I am served as I am but if there is any improvement I appreciate. I wish you luck for your studies. Thank you

For me everything is good

I enjoy very much going to the polyclinic of Rahal Gdid and I was always served well. Regards pills I always found that I am entitled to them from the government. Others I buy with prescription from the pharmacy

I hope I explained well so that the health service keeps doing well for everyone

The POYC system is very good

Till now my wife has never found problems to get pills from the NHS. With the POYC I think it is doing well and you get served very well. We avoid a lot of time waiting as we used to. There is always room for amendment especially when it concerns health.

Maybe reason I never ordered to buy online, cause we have very helpful pharmacists in the area that even if medicine is not currently available, they take my number and call me when available or get it specifically for me. Also, I trust the, a lot as they are very strict with prescriptions especially where antibiotics are concerned.

I am satisfied to pick the medicine from the private pharmacy and that of my choice

I get pills from the NHS and I always found them efficient. Pills like vitamins, pills for thyroid I always bought from the pharmacist. I don't know why this hassle to buy them from internet when the pills can not arrive or are inferior. The amount I need is a little. I hope that your research will be a success. We need people like you

4. Comments about dissatisfaction with quality of NHS medicines due to frequent change in brands and other problems

I feel that the quality of pills obtained free from gov. health system has degenerated (eg. Diovan to Valsartan)

I wish that the pills remain the same brand, I am afraid that others have side effects

Unfortunately sometimes information handed out by pharmacists + doctor contradict the product information leaflet which can make it very confusing to the consumer

As i already wrote, I take a lot of interest in the medicines I take. So I wish to believe that the NHS medicine that I get from POYC, is truly good just as if I still buy it from the pharmacist

because everyone says that they are the same but many times, sorry, I don't believe
It is a shame that certain pills become out of stock. Pills for pressure for example, are life or death; you cannot afford to stay without them. Who takes care to order the pills should get so that they are not out of stock
When doctors or consultants issues a prescription for new pills to issue also the application for approval by St Luke's Department to avoid the inconvenience for a second visit to them which could involve quite a lapse of time they could be made available from the pharmacy
Many pills come with the same name. But especially the pills that I am entitled to from the government change colour and (packaging) often. For me it is already difficult that I take a lot of pills. It is more difficult for those that do not know how to read and for the elderly. My husband does not recognize the pills because they are never the same and the same colour and he does not know how to read. Thanks
What worried me the most was that they used to give me paroxetine of Aurobindo but now they are Arketis, not coated and they melt in the mouth. Once they got stuck in my throat and I could not breath properly besides the bad taste and it come off the day after so much so that I spent 2 days hoarse. That is why I am buying them film coated. I am sorry that maybe other people are throwing them away or they have to swallow them. I hope I was helpful
Frustrated with the difficulty getting (Cynomel 0.025mg) thyroid medication that I must have everyday. Can only buy at hospital, and on occasion, they do not have ANY available. How can this be?
Timolol 0.25% has not been available from the pharmacy of Qormi for 4 months and I have to buy them for my son who has glaucoma
I will comment about the schedule V scheme. Extra bureaucracy to keep renewing a permit for a medicine that you have to take every year. This is a waste of time when the medicine is prescribed for life
5. Comments about existing awareness among the Maltese of issues about safety
Buying medicine online means there is no urgency. The website- hosting location and reputation also matters. Sometimes there is also a difference in legislation between EU/US
I do not agree that I buy medicines from the internet, with medicines you do not joke and if it they are not good for you you still need a doctor to guide you. The cholesterol ones are not good for m, they gave me three types. You are going to send them back? It's a waste of money once we have in Malta. Its true that sometimes they are a little more expensive, but there is nothing more important than health
I buy a lot of things from the internet but I never buy food or medicines because although one can verify that they are genuine, this takes time. Besides this the consumption of medicines at home is very low and so it was never worth the risk
A lot of these questions I could not answr because I never bought medicines online. Health comes first and so I am not going to look for products that may be counterfeit. I am aware of this and I suggest this also to members of my family

I don't buy any medicines from the internet as I don't think its safe
The internet is a powerful tool if used correctly. In Malta there is not enough education about the services and availability of internet users. I do not like buying clothes online since I prefer to see the texture and fit. I cannot understand how someone can risk buying medicines online- I care more about myself and my body- I also question the doctor and pharmacist why I am getting this and that medicine and I need to check expiry dates and quality before I buy. I may come across as someone who is very suspicious but adopting a healthy lifestyle and exercising is an excellent way to help yourself live healthy. Genetically transmitted conditions cannot be helped all other illnesses can be addressed differently.
Personally its not for me to buy medicines from internet. (what if you receive pills for animals instead for humans)
I think that if treatment that people need, is monitored from the beginning, a lot of pills can be avoided, because when you are in pain that you cannot endure, that is why certain individuals buy from internet but you cannot believe everything because there is a lot of danger, regarding health.
Trustespecially because medicianls can have symptoms on which you might want to consult doctor in Malta
6. Comments about needing more knowledge about medicines they are taking including more knowledge about herbal remedies; about need for more awareness about medicines online and about their safety
I agree that there should be more knowledge about medicines that we have to take because a lot of conditions increased and you constantly hear about a lot of medicines like home remedies that although they can be good but we do not have enough knowledge like that which we buy from the pharmacist and which was studied much more before being used although there could be a product which you may be allergic to
More information is needed about how one can acquire medicines from alternative places
Grazzi It is good that we inform people about what can be harmful for their health. Thank you
Maybe you could do a list of products that are safe that can be bought over the internet
More official information (health dept) about medicine online (and even locally) about reliability, risks, side-effects- 'approved medicine'
Well done! Much needed research! POMs purchased on the web need surveillance. We need more awareness to poor quality/fake POMs acquired on the web. Many like steroids or hormones cause psychosis/relapses. This will reduce hospital admissions for this and other disorders eg. liver toxicity. POM purchase of steroids off the web is a huge + tragic contemporary reality.
I think more information should be made available about buying medicines online; especially certified/registered online pharmacy so that people can identify legitimate sellers

7. Comments regarding expensive prices of medicines compared to abroad
Medicine prices in Malta are sky high when compared to abroad. There is no control over the prices
I also take calcium suppliments + Vit D. I buy these from the UK whenever I'm there as they're cheaper. Unfortunately I can't do anything about the Prolia I have to pay the high price. I've been living here for 2 and half years after an ansence of 35 yrs and find medicine very expensive, even things like creams, cough mixtures etc.
Get medicines from Sicily as they are much cheaper
Prices of medicines in Malta seem to be much higher than in the rest of Europe. In some cases the differences is quite stunning. Ex. Zyrtec or cetrizina tablets and Lipanthyl (in Malta around 12 euro in France around 6 euro)
8. Comments that buying medicines online would not be a problem if reputable and if quality is guaranteed
If the internet source was a reputable one, I don't think I'd have a huge problem shopping for my medicine online.
I would assume it is safe to buy medication online if the website you are buying from has a good reputation, same goes with clothes, tech and other equipment bought online.
If I was sure that the product (medicine) is of the same quality and brand that I buy locally and the price is lower I would highly consider buying from the internet. (obviously, if not needed immediately)
9. Comments about being healthy and only uses OTCs and supplements
I thank the Lord that I am 86 years old and I am not aware that I ever got sick. I only take vitamin B complex. But these last 4 years I got arthritis in my knee, the palms of my hands and the worst is my neck and I am taking Iprinol. But pills of Tumeric and Ginger reduce the pain and I started them this week
I do not take any medicine till now "thank God" except aspirin every now and then
10. Comments about disagreeing and not intending to purchase online
The last medicine I took was last year- antibiotics. I never bought medicines from the internet and I do not intend to
I've never bought any medicine online. Every time I was in need of any particular medicine I always obtain (buy) it from my local pharmacy

11. Comments about being unaware whether medicine can be obtained free from NHS
As I have stated in the previous page, I suffer from kidney problems. They leak protein in my urine and they work half as good as normal kidneys. I take enalapril twice everyday for them, but I do not know if I can get them free with the government health system, so i just buy them.
I never bought medicines from the internet. My wife and I get free medicines from the NHS. I buy Rhinocort Nasal spray because I never checked if I could get them free or not. "one a month"
12. Comments about doctor's prescribing
My families' extended and nuclear are my main priority so health and health products are in my interest. If herbal remedies do not work then, and only then will I get medical solutions. Doctors are too eager to give medication for every little ailment and unfortunately, people are becoming addicted or immune. Good luck with your study!
My father takes medication for hypertension available from gov. Other ailments for all my family are bought @ the local pharmacy as prescribed. I try to limit buying/taking medicines in general and prefer to revert to more natural remedies to cure flu symptoms for both myself and my son
13. Comments about difficulties to fill questionnaire
I did not find it very easy to complete
Questionnaire need to be revised as 'the go to question 9' is very misleading
14. Comments about internet use for purchasing medicines not necessary for Malta
In Paola, there are a substantial amount of pharmacies and the use of internet for medicines is not necessary. There are pharmacies like that at the national airport that remain open 24hours
15. Comment about free medicines going to waste
However, I do feel that some of the freely-given medicine by govt goes to waste because some are dispensed with a very short expiry date. Happened to my father
16. Comment about increase in retail prices
Unfortunately, whenever I need to buy medicines, even simple 'panadol' I find that they increased in price
17. Comments about the need for more treatment options
I wish that there is more treatment that controls the skin condition, psoriasis because we suffer a lot because when it is aggressive the products do not control it. I wish that if possible some type of injection is given so that at least it calms down

18. Comments about side effects with medicines purchased online
Although the medicine that I bought over the internet was good, after a few months I started to suffer from tremor in my left hand and when I read the medicine leaflet it was listed that it could be a side effect. I stopped using them, bought from Malta and I went back to normal- without side effects
19. Comment about not having internet
I do not have internet and I do not know how to use it, and so I could not answer 13, 17 , 18 well
20. Comment about local availability
In general we buy all our medicines locally except some which we don't find locally but only buy from BOOTS website

APPENDIX 6 Interview Topic Guide

Interview to patients

Greeting

Thank you for accepting my invitation to be interviewed. I would like to re-confirm your consent that this will be audio-taped but the transcript will be kept anonymous.

I am here in the capacity of an interviewer and therefore you are the expert. Your experiences are important for this research. The aim is to be able to draw conclusions and to inform the strategic plans related access of medicines within the healthcare setting in Malta.

1. What in your opinion constitutes a medicine?

Give examples to explain if you like.

Types e.g. POM, OTC, herbals, etc.

2. What medicines do you need to buy? And who generally recommends them?

Doctor, pharmacist, friend.

With prescription or without.

3. Where do you buy medicines from? Include any type that comes to mind.

Reasons why you buy from this place or a website e.g. doctor recommendation

4. Lets talk about cost issues. How does the cost affect you? Or maybe you don't question the cost?

Does doctor help by choosing alternative treatment even if maybe it would be inferior to what is recommended in guidelines.

Does doctor or pharmacy give a sample

5. Lets talk about supply issues. When not available to buy do you wait for supply or get from an alternative place?

Maybe your pharmacist talks to doctor to change treatment, or tells you where to get them from etc.



6. Culture. Who is the reference point when you have problems with medicines?

Who do you trust most with such issues

7. Lets talk about purchasing medicines from internet. What is your opinion or experiences?

What do you know about it or people who use it

APPENDIX 7 Consent Form

 <p>UNIVERSITY OF BATH</p> <p><small>Bath BA2 7AY · United Kingdom</small></p>	<p>Participant Consent Form _____ 2016</p>	 <p><small>UNIVERSITY OF MALTA L-Università ta' Malta</small></p>
Principal Investigator:	Corinne Bowman	
Organization:	University of Bath, Doctorate in Health	
Project:	Consumer purchasing of medicines in Malta: an insight to how the Maltese population obtain their medicines	
Part I: Information Sheet		
Purpose of the research		
Purchasing medicines may be a problem for some people. It is important to understand how the Maltese population is acquiring their medicines. We believe that you can help us by telling us about problems you encounter when you need to purchase a medicine. We want to learn about the use of the internet with respect to medicinal purchasing and whether the population feels confident or at risk with this approach. The knowledge from such practices will help us better understand trends in consumer purchasing of medicines.		
Type of Research Intervention		
This research will involve your participation in an interview via telephone or face to face, whatever is convenient for you.		
Voluntary Participation		
Your participation in this research is entirely voluntary. You may change your mind later and stop participating even if you agreed earlier. Information collected prior to withdrawing will be removed and deleted.		
Procedures		
You are being asked to participate in an interview with myself, the researcher. If you do not wish to answer any of the questions during the interview, you may say so and I will move on to the next question. The entire interview will be tape-recorded, but no-one will be identified by name on the tape. The information recorded will be treated as confidential, and no one else will access the information documented during your interview. The tapes will be transcribed. They will be destroyed at the termination of the study.		
Duration		
The interview will be held once and will take approximately half an hour.		
Benefits		
Your participation is likely to help us find out about how the Maltese population obtains medicines with special focus on the internet as a source. Through your participation, concerns related to medicines purchasing can be identified. In return, patterns of practices can be drawn and proposals to address health concerns may be devised for the benefit and safety of the Maltese population.		
If you would like a copy of the final report of this study when it is completed or a copy of your interview transcript, then please feel free to contact me, the researcher, on the email below.		
Confidentiality		
We will not be sharing information about you to anyone outside of the research team. The information that we collect from this research project will be kept private. Any information about you will have a number on it instead of your name. Only the researcher will know what your number is. If any of your statements are quoted, these will be kept anonymous so that you cannot be identified through them.		
Please note that in cases that you divulge information outside the scope of the study about self-harm or about harming others, the researcher may deem it necessary to breach this confidentiality. In such cases your GP may be contacted. This is for your safety or that of others to yourself or to others.		
Who to Contact		
If you have any questions, you may contact me Corinne Bowman at C.Bowman@bath.ac.uk		
<small>Approval has been granted by University Research Ethics committee, Malta as well as Research Ethics committee, University of Bath.</small>		
<small>Page 1 of 2</small>		

Part II: Certificate of Consent**Consumer purchasing of medicines in Malta: an insight to how the Maltese population obtain their medicines****Researcher:**

Corinne Bowman Tel no: [REDACTED] email: C.Bowman@bath.ac.uk

Principal supervisor

Dr Hannah Family, Department of Pharmacy and Pharmacology University of Bath _____

Other supervisors

Dr Hugo Agius Muscat, Consultant Public Health, Health Information Management Unit, Malta

Prof Maria Cordina, Department of Clinical Pharmacology and Therapeutics, University of Malta

Please initial the following:

1. I confirm that I have read the information sheet for the above study, dated _____ 2016. ☐
I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. ☐
3. I agree to be recorded using a digital Dictaphone during the interview. ☐
4. I understand that all data collected during the study will be treated as confidential and anonymity assured. ☐
5. I agree to be quoted in academic journals or magazines and understand that any quotes will be anonymised so that I cannot be identified by them. ☐
6. I agree to take part in the above study. ☐

Name of Participant_____
Date_____
Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this Consent Form has been provided to the participant.

Name of Person taking consent_____
Date_____
Signature